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THE CAMERA

AN ILLUSTRATED MAGAZINE DEVOTED
TO THE ADVANCEMENT OF PHOTOGRAPHY

EDITED BY
FRANK V. CHAMBERS

VOLUME TWENTY
1916

THE CAMERA PUBLISHING COMPANY
PHILADELPHIA, PA.

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Volume Twenty

JANUARY 1916

Number One

A PAINTER-PHOTOGRAPHER— PEARL GRACE LOEHR

OUR principal illustrations this month are the work of Pearl Grace Loehr, one of the women in photography who has made a great success in her work, and her ability in this direction has caused her to be appointed as the head of the new photographic department of the New York School of Fine and Applied Arts, the first art school to recognize Photography as a Fine Art. This is not only an honor to photography, but also an appreciation of Miss Loehr's artistic conception, as expressed in our beautiful art.

Pearl Grace Loehr is an ardent worker in "gum," and surrounded, as she is, in Washington Square, New York, by a colony of artists, she naturally comes into contact with the most famous—consequently, her ability has been appreciated in many quarters.

Steadily the work of the photographer is finding wider fields. Commerce, industry, science, the useful arts and lastly, the fine arts are claiming its aid. This economic fact is finding wider recognition, and facilities for training photographers are being added to many colleges and universities.

Miss Loehr has been a national figure among photographers since her sane and practical address was made before the Photographers' Association of America Convention in July, 1912.

This address, in which practicality was wedded to artistic insight and ability, set forth in clear words a business proposition for women who need to earn bread, but who seek to give expression to the creative and artistic longings which fail to reach other outlets. In this address Miss Loehr set forth her sense of a double duty, one to her art and the other to her sister workers, in her efforts to lift an occupational employment to a standard satisfying to the soul and spirit and yet yielding the needed financial returns.

This spirit has marked all the work by which Miss Loehr has become known—it is shown in her professional work, and it is the keynote in all her public work in the Photographers' Association of America.

In 1913 Miss Loehr was elected President of the Women's Federation of the Photographers' Association of America. During her term of office Miss Loehr devoted her time, her talents and her services toward not only the success of the Women's Federation, but to the broad purposes of the whole professional body.

One has but to read the articles from her pen in all the leading photographic magazines for the year 1913-1914, to realize the broad, impersonal, helpful spirit which characterizes the woman, and which finds expression in her life and in her work as an artist.

Led by Mrs. Gertrude Kasebier, within recent years, there has arisen what, for lack of a better term, may be called "painter-photographers." Of the younger women in the profession, Miss Loehr is one of the ablest exponents of this character of photography.

Few artists of the brush or of the camera have delineated more faithfully the spirit of the two extremes of life—the helpless babe and the aged. While her work is not limited to these subjects, her most individual characteristics are to be seen in these pictures.

Our reproductions of the work of Pearl Grace Loehr very inadequately present the characteristics of the art phase in photography, of which Miss Loehr is an eminent exponent.



"EAT NOW." PEARL GRACE LOEHR, NEW YORK



"MAX BLUE." PEARL GRACE LOEHR, NEW YORK



SARA MORRIS GREEN

GUM PRINT. PEARL GRACE LOEHR, NEW YORK

The half-tone process, though the best, does not lend itself to the translation of the delicacy of the originals, expressed as they are, in low values. We miss their individuality of the gradations of light and shade; besides, the medium of the photographic prints themselves (gum prints) is most difficult to adequately translate in terms of black and white.

Miss Loehr's range of subjects, judging from the examples before us, is a wide one, embracing almost every phase of domestic life, interpreting the quaint and picturesque scenes of the home, the innocence of childhood and stern realities of active life.

Her treatment of babyhood is particularly charming, expressed with grace and a delightful *naïveté*. Equally successful has she been in the bringing out of the character and individuality of grown up people, and in the expression of the motive of the picture. "Ring Out the Old, Ring In the New," feelingly expresses the sentiment of Tennyson. The face of the old man is as a book where one may read the pages of his heart. In the picture "Sallie and Her Mother," note the beautiful expression of maternal affection and the innocent response of the babe. And in the "Little Dutch Baby," what could be more childlike and sweet than what is shown upon the chubby little face, or the other baby picture, where the little one is absorbed with the all-absorbing



"DUTCH BABY." PEARL GRACE LOEHR, NEW YORK

operation of thumb-sucking. Miss Loehr is also most successful with pictures of children at all stages of growth. She catches them just at the moment when they are most essentially themselves. Note the picture called "Max Blue," or the genre study "Eat Now," or the group of "Three Dutch Children," or the charming head of a little girl in the "Easter Bonnet."

It is not often that a woman succeeds so well as Miss Loehr in the photography of men. Her portraits of the male sex have a painter-like expression, bringing out most excellently the expression of the particular trait of character of the individual portrayed. Look, for instance, at the portraits of Col. E. W. Van C. Lucas, and James Earle Fraser; particularly that of Richard Mansfield, 2d; while Babyhood, Youth and Middle Age receive most adequate and characteristic treatment, Old Age is equally considered and its peculiar features brought out to perfection.

In all her work, Miss Loehr projects and reflects her artistic temperament, and while expressing to the full, the æsthetic phase, fails not to appreciate the essential of all portraiture, the bringing out of the individuality and personnel of the original.



"LITTLE BROTHER." PEARL GRACE LOEHR, NEW YORK



"DUTCH CHILDREN." PEARL GRACE LOEHR, NEW YORK



"PRAYER." GUM PRINT. PEARL GRACE LOEHR, NEW YORK

PIN HOLE PRINCIPLES FOR THE BEGINNER—C. H. CLAUDY

THE melancholy days have come, when photography out-of-doors takes courage and plenty of warm clothing. The Beginner, deeply bitten by the photographic microbe, often finds that the courage is well expended when it takes him far afield in freezing weather and in snow. But at least as often, he prefers to hug the fire and dream of the days when he can once again make exposures and turn the key without frost bite to his fingers.

To all beginners in general, but particularly to him who wants to enjoy his photography and his comfort at the same time in cold weather, the study of pin hole photography is most heartily recommended.

Pin hole photography is fascinating, interesting, inexpensive and often beautiful in result with a beauty which the lens never surpasses. It is simple to understand, simple to do, and therefore pleasurable—and it holds many lessons in its practice for him whose usual work will be, of course, with lens and shutter.

But before undertaking pin hole work—unless merely from curiosity and a desire to say “I have done it,” it is surely wise to try to understand the principles which underlie it. Merely putting a pin hole in place of a lens and guessing at an exposure may produce a photograph but hardly any knowledge of further use to the experimenter.

As most beginners have heard, it is not necessary to use a lens in making a photograph. For the lens can be substituted a very small hole, usually termed a pin hole, although never to be made with a pin if a needle, a drill, a small file and a few corks are to be had.

But leaving for the present the manufacturer of a pin hole, let us delve a little into the reasons why a pin hole acts in place of a lens.

The lens has its principal function in the gathering of light from the object to be photographed, and bending or refracting that light to form a real image of the object in a certain place or plane, called the focal plane. When we put a sensitive plate or film in this plane and allow the real image to fall upon it, we take the first step in negative making.

If we had no lens in the camera, but merely an opening where the lens should be, we would get no negative, but merely a fogged plate, because the rays of light from any one object would fall uniformly all over the plate. The lens takes the rays from the top of a tree and forms them into an *image* of the top of a tree, the rays from the tree trunk and forms them into an image of a tree trunk, and so on.

If, however, we have a very small hole in place of the lens, all the rays of light are kept out of the camera except a very small number, which can get through the hole. The rays of light from the top of a tree, radiating in all directions, are kept from falling on the plate by the front of the camera. One little bundle of light rays from the top of a tree only can get through the minute pin hole. This opening admits a tiny *cylinder* of light, which proceeds to the

plate where it impinges; so, also, of course with tiny cylinders of light from all the rest of the tree. If the hole is sufficiently small, the tiny circles formed on the plate by these tiny cylinders of light are not large enough to appear confusing to our eyes. The result is a real image of the object—tree—in front of our camera, which acts upon the sensitive plate exactly the same way that the real image formed by a lens would act—with this difference. Openings of any kind admit light in proportion to their areas. That is, a hole one inch square will admit half as much light in a given time as one two inches long by one inch wide, and a fourth as much light as one two inches long by two inches wide. In the case of circular openings, such as lenses and pin holes, they admit light in proportion to the squares of their diameters. Now a pin hole may be a fiftieth of an inch across. A lens may be one inch across. The square of one-fiftieth is 1-2500. The square of one inch is one inch. Therefore, the lens of one inch opening will admit twenty-five hundred times as much light in the same time as a pin hole one-fiftieth of an inch across, providing both pin hole and lens are the same distances from their respective plates.

The pin hole "lens" then, is extremely slow in its action. It is a practical impossibility to use it for snap shots, or, indeed, for quick time exposures. Landscapes, where the wind is blowing the foliage, are not suitable subjects for pin hole work. Neither are portraits to be made with it with any satisfaction, as it requires too great a strain on the part of the sitter. Pin hole work is restricted then to still life, to stationery landscapes, and to such work as is reasonably well lighted. Painstaking experimenters have made portraits with pin holes, but I am speaking now of what is comfortable to do with the pin hole rather than what can be done at a pinch.

But if the pin hole falls short of the lens in speed, the pin hole has nothing to be ashamed of in other respects. Save for an often pleasing lack of microscopic definition, the lenseless camera will produce pictures not only equal to, but superior to, those made with the finest of lenses. A pin hole has no aberrations as such. It does not suffer from spherical aberration, curvilinear distortion, lack of rectilinearity, astigmatism, curvature of the field or chromatic aberration. It has no flare, coma or ghost. It has no surfaces to lose light by reflection; and, therefore, produces the most brilliant images possible to make in a camera, even more brilliant than those made with a spectacle lens. The image is not brilliant to the eye, because it is dim in illuminating power, but the brilliancy is there in richness of light rays and full power of the chemical rays of light.

Another advantage that the pin hole has over the lens, is that it may be used at any desired "focus." The term is a misnomer—a pin hole has no "focus." But the plate may be put two inches or twenty inches behind a pin hole or anywhere in between, and the pin hole will make as good a picture in either position as anywhere else.

The reason is not far to seek. A lens focuses light by bending it and making an infinite multitude of cones, the base of which is the lens, the apex the point of focus on the plate. Move the plate forward of this point and the



"RING OUT THE OLD, RING IN THE NEW." GUM PRINT.
PEARL GRACE LOEHR, NEW YORK



RICHARD MANSFIELD, 20

GUM PRINT. PEARL GRACE LOEHR, NEW YORK

image blurs, because the plate then cuts these cones of light across, and circles—the “circles of confusion” of the text book, result. Move the plate backwards and the same thing occurs, the inverted cone of light being cut, also produces circles of confusion.

But the pin hole produces *cylinders* of light (to all practical purposes) which can be cut anywhere and still remain the same size little circles. It is to keep these circles small that the pin hole must be small. But whether the image be formed two or twenty inches behind the “lenseless lens” or pin hole, the little circles obtained by cutting the pin hole’s cylinders of light are to all intents and purposes the same size.

As a matter of fact, there comes a point when refraction and diffraction phenomena interfere with the clear formation of a pin hole image, and exposures get so long as to be prohibitive and so there are limits to the “focus”



"THE EASTER BONNET." PEARL GRACE LOEHR, NEW YORK

at which one may use a pin hole. But for all practical use, and certainly for the draw of the average camera, a pin hole may be regarded as a "lens" of universal "focus."

This is a precious property and puts a wide range of work at once at the beginner's disposal. For instance, if he is ten feet from a bush and wants a picture of it six inches high (let us suppose the bush to be five feet high), he can have it by putting his pin hole a foot in front of his plate. If, then, he desires a different perspective, but the *same size image*, he can move off twenty feet and put the pin hole two feet in front of his plate. Or he can move up to within five feet and put the pin hole six inches from the plate. All three positions and "foci" will yield the same size image of the bush but with an entirely different viewpoint and perspective to each. In confined situations, the pin hole close to the plate becomes a "wide angle" affair. For distant objects, used at ten, fifteen or twenty inches from the plate, the pin hole becomes a telephoto.

It should be understood that everything which has been said about a pin hole and the work it does, is predicated on the possession of a good pin hole. The hole must be truly round. It must have perfectly smooth edges. It must be made in as thin a material as possible. It must be blackened in its interior. For though the pin hole at its largest is a tiny affair to the eye, it is infinitely great to a light ray. And the thinnest material has some thickness, and therefore, the best pin hole will be, as it were, a little pipe or tunnel through a wall. Light rays can be and are reflected from the inside of this pipe or tunnel. The thicker the material, the longer the tunnel, the more reflections, and the less perfect the image. Therefore, make your pin holes with care and attention to details, and see that they fulfill the requirements—otherwise no real success will be had. For first experiments, take a sheet of thin brass. With a small drill make a countersink depression. Hold the finger on the reverse to be sure the drill does not come through. Then, with a fine cambric needle, mounted in a cork, very, very gently pierce the brass in the center of the countersink. Work the hole through first from one side then from the other. Examine with a magnifying glass and blacken the finished hole by holding the brass in the flame of burning flowers of sulphur (which is best done out-of-doors).

No, this process won't give you a fine "pin hole." It takes experience and much practice to make a really fine pin hole. But this will start you off. You need no shutters—your finger over the hole while the slide is drawn is all that is needed. When we come to the practice of pin hole photography, we can examine with more particularity into the making of a fine pin hole, and also go into a point which will be very necessary to understand, and that is the determination of exposure. Sufficient for the time this little exposition of the first principles of the lenseless camera—one of the most interesting of the many interesting side trips in all the land of photographia.

(To be continued)



MARJORIE MASON

GUM PRINT. PEARL GRACE LOEHR, NEW YORK



"GRANNY." PEARL GRACE LOEHR, NEW YORK

SPORT OF WILD-LIFE PHOTOGRAPHY HOWARD TAYLOR MIDDLETON

THE camera enthusiast, whether he be amateur or professional, has never received all the pleasure that can be obtained through the taking of pictures unless he has invaded the field of wild life photography.

The fellow who tramps abroad with gun and dog knows the thrill that comes with the explosive whir-r-r of a covey of flushed partridges, and the chap who whips the singing brook with seductive flies, boasts of the delirium of delight brought by the charging trout.

However, if these gentlemen could experience the ecstasy that has fallen upon the writer, when after a period of failures, he has obtained an unusual photograph of one of the little folks of the outdoors, they would agree with him that even the kingly sport of the gun and rod is surpassed by that of the hunting camera.

Quail and trout are epicurean delicacies it is true, and even when preserved as permanent trophies through the art of the taxidermist, make valuable additions to the ornamentation of the den or dining room. To the man who is fond of his stomach and proud of his ability to kill, the quail on toast, the broiled trout, or the mounted specimens that adorn his walls, not only fill his heart with pride, but carry out to the superlative degree his ideas of true sportsmanship.

I know this to be so, because in the days before I gave up my 12-gauge and my Savage 22 for the Premo 4x5, I was a killer, too. What was not good to eat I had stuffed and considered myself a devil of a fellow with a firearm. When my friends called I showed them the effigies of the great horned owl,



MOTHER CHIPPING SPARROW FEEDING YOUNG PERCHED ON HUMAN HAND. THIS PICTURE REQUIRED A VERY GREAT DEAL OF WATCHFUL WAITING AS WELL AS PATIENCE. H. T. MIDDLETON, HAINESPORT, N. J.

the osprey and the pheasant, and assuming an air of great modesty informed them nonchalantly that I had plugged them on the wing at sixty yards.

Now, thank God, I have something more worth while than feathered manikins in the way of a natural history exhibit, and when I turn the pages of my bulky album, fast filling with bird and animal studies *from life*, the very thought of shooting except with a camera is most repulsive.

To the photographer with aspirations toward wild life pictures, but who has paused on the brink of this fascinating pastime because of the costly equipment he deemed necessary, I have this to say: Any ordinary camera with a rapid rectilinear lens and a shutter speed of $1/100$ second will do nicely. Of course, if a faster lens and shutter are used, the chances of a blurred image, due to movement, are reduced to a minimum. Also, when the light conditions are not the best, a fast lens is invaluable. I have found, however, that it pays to wait for clear skies for action pictures with a slow lens, although a very rapid plate will very often bring success even under adverse weather conditions.

There are several ways of photographing game both by day and by night, and they are so intensely interesting that I will endeavor to explain in some detail how each method can be best employed.

In the beautiful springtime, when the mating season opens among the feathered and furred people of the woods and fields, very unique photographs can be procured of nesting birds and animals with young. At this time of the year, the maternal instinct is so highly developed that even the presence of man cannot keep a mother of the wild life world from her children.

The picture of the female chipping sparrow feeding her young upon a human hand was obtained after a great deal of watchful waiting and a vast expenditure of patience. It also demonstrates the fact that very unusual



"YOUNG KINGFISHERS." H. T. MIDDLETON, HAINESPORT, N. J.



COL. E. W. VAN C. LUCAS

GUM PRINT. PEARL GRACE LOEHR, NEW YORK



"SALLY AND HER MOTHER." PEARL GRACE LOEHR, NEW YORK

pictures can be obtained with a moderately priced outfit, the instrument used in this case being a Premo long focus, fitted with an R. R. lens.

The nest of young chipping sparrows was discovered in a jack pine soon after the hatching of the eggs and various photos were taken showing the youngsters progress along the road to maturity. The climax came on the day that they left their snug home for the wonders of the great world.

They were taking their first lessons in aviation as the camera man arrived, and as he glimpsed their brief but sturdy flight, an inspiration came. He knew, by experience, that even while sojourning within the confines of their cozy abode among the odorous pine needles, their appetites were most rapacious. What must they be now with the added stimulant of strenuous exercise?

"George," said I to my enthusiastic assistant, "do you suppose in the event of those kid sparrows condescending to perch on your hand, that the mother could be induced to join them?"

"Nothing like trying," came the philosophic answer. "It will surely be *some* picture if she does."

While George caught the juvenile subjects, which, by the way, was a gigantic undertaking due to their rapidly increasing activity, I arranged the camera. When he eventually arrived with the squirming trio enclosed in his left hand the real fun began. The moment he would open the doors of the



"BARN RAT PHOTOGRAPHING HIMSELF AT NIGHT,"
H. T. MIDDLETON, HAINESPORT, N. J.

improvised studio three tiny feathered balls would spring into the air and volplane to a neighboring bush. Even though this was discouraging, I still had hopes because of the presence of Mrs. Sparrow with a fat worm in her beak hovering overhead.

"Patience my boy, patience," I remarked soothingly, as my partner, perspiring and slightly profane, once more established the young birds in position before the camera. This time they spied their mother circling above them and called to her in a hungry chorus: "Chip! chip! chip!"

With my finger caressing the cable release, I held my breath and waited. Straight as an arrow from a bow she came to them, and perching without the slightest symptom of fear upon George's finger tips, dropped the wriggling worm into the gaping mouth that happened to be nearest. She was only there a moment, but it was *my* moment, and resulted in an exceptional photograph.

A picture of this sort requires no special outfit except sometimes when the parent birds are afraid of man but not of the camera. In that case, a silken thread attached to the shutter trip of the set camera enables the operator to shoot from a distance. When even the presence of the camera causes alarm it can be made invisible through the medium of a screen composed of leafy branches, but I have very rarely found this to be necessary.

The illustration showing the young kingfishers was procured in the at-



"WILD WEASEL TAKING HIS OWN PHOTOGRAPH BY PULLING AT LURE-SATURATED BONE." H. T. MIDDLETON, HAINESPORT, N. J.



JAMES EARLE FRASER

GUM PRINT. PEARL GRACE LOEHR, NEW YORK



"SMELL THIS." FIRST PRIZE, THE CAMERA COMPETITION NO. 199
MRS. C. S. HAYDEN, CATONSVILLE, MD.

tempt to induce the parent birds to join the group, but the writer was forced to be content with the portraits of the younger members of this interesting family.

The most fascinating of all the methods employed in bagging wild game with a camera is that wherein the animal or bird is induced to take its own picture by pulling on a baited line attached to camera shutter. Animal self-portraiture has been so extensively indulged in by one prominent wild life photographer, whose work appears exclusively in the *National Geographic Magazine*, that he has as many as fourteen cameras in the woods at one time. The instruments used by him are constructed entirely of metal and are, therefore, dampproof—also exceedingly expensive. The ordinary outfit will answer just as well, even in stormy weather when covered by a rubber cloth, provided the plates do not remain in the camera more than twenty-four hours. After that time the moisture is apt to spoil them.

The greatest chances for success in this branch of photography come during the night, that being the only time when the more timid of the forest prowlers are abroad. When a night picture is to be taken, it is necessary to use a flashlight gun working synchronously with camera shutter. There is a very dependable little machine manufactured for this purpose, is the Imp flashlite gun, and fulfills its mission in an eminently satisfactory manner. The flashlight



"GROUNDHOG PHOTOGRAPHING HIMSELF THROUGH MEDIUM OF STRING
BAITED WITH LETTUCE. H. T. MIDDLETON, HAINESPORT, N. J.

photograph of the barn rat illustrating this article was taken with an "Imp" gun, a piece of cheese being used as bait.

One of the delights of this form of photography is the element of doubt that enters into it. When you visit your camera in the morning after it has been set out of doors over night and find the shutter sprung and bait gone, there immediately arises in your mind the question of the identity of the nocturnal caller. You look for tracks and if the soil proves soft and free from fallen leaves, you will, perhaps, distinguish the broad hand-like footprints of Brer Possum or the larger though similar impressions made by Mr. Coon. It very often happens, however, that there is not the remotest clue to be gained from even the closest scrutiny, and you must await the time when with dark-room door closed tight and ruby light aglow, you gaze with longing eyes into the depths of your developing tray.

Some animals that travel by day often come to the bait before nightfall and fire the flash prematurely. For example, in setting a camera outfit in a grassy field and baiting a line with lettuce in the hope of obtaining a night portrait of Bobby Rabbit, just as likely as not Sammy Groundhog will amble along and leave his image upon your plate instead.

Occasionally, a meaty bone or a succulent piece of bacon hung up in the forest to tempt the appetite of Brer Possum or Mr. Coon will be pounced upon by that ten inches of villany, the weasel, in broad daylight.

Still another way to photograph wild creatures is by means of the jacklight. Some evening, just at dusk, when you hear the quavering cry of a screech owl near at hand, grab your camera and flashlight gun, put an electric lamp (jacklight) in your pocket and stealthily approach the ghostly silhouette outlined against the darkening sky. He is on a limb about eight feet from the ground and you can get his portrait if you stalk him with sufficient care. Now you are quite close and he is growing restless. He has ceased his weird calling and taken to snapping his beak instead. Also he turns his massive head from side to side, and his big eyes gleam and blink. Shine him with the jacklight if you would get nearer. Hold the electric flash and gun in your left hand, the camera in your right, keeping a beam of light playing upon him continuously. This will blind him and you can pick him off the limb with your hand if you want to. When you are as near as possible, pull the trigger of your gun, and, if your guess as to distance has been a good one and the amount of flashlight powder in the pan correctly measured, you should have a successful picture.

It might be well, in closing, to state that aside from the sheer pleasure to be derived from the taking of wild life photographs, they are remunerative as well. Magazines, which make a specialty of events transpiring in the outdoor world, pay well for extraordinary pictures of this character.

There is a steady demand for photographic life stories of birds and animals also, and every photographer whose environment will permit his entering into this royal pastime, should lose no time in doing so.

The field is as wide as the universe and the expenditure necessary for a serviceable equipment is diminutive. What more would you have?



"A RELIC OF THE PAST." SECOND PRIZE, THE CAMERA COMPETITION NO. 199
SUISUI STOW, PORTLAND, OREGON



"THE MANTLE OF FOG." HONORABLE MENTION, THE CAMERA COMPETITION NO. 199
ALICE M. WILLIS, ST. LOUIS, MO.

THE YELLOW SCREEN

THE subject, the yellow screen, or filter, is one upon which we have frequently written, but we do not hesitate to reiterate our injunctions that its improper application does more injury to proper rendition of color values than would accrue from the entire neglect of it. The current opinion seems to indicate that there is a prevalent misconception of its particular function and a want of proper understanding of the fundamental principles of orthochromacy. We shall, therefore, endeavor to explain as simply as possible, just what the plate does, and what the screen effects in combination with the plate.

It is hardly necessary to remind the photographer that an ordinary plate is disproportionally sensitive to yellow and blue. The blue and violet rays have the maximum action, the yellow the minimum and the consequence is that an exposure upon a subject reflecting both these colors give excessive contrast between these limits. The color reproduced in the print from the yellow is black, whilst the color from the blue is shown up as white, thus really falsifying the original colors as far as values are concerned. For it may happen in the original, that the blue is really the deep shade and the yellow the high light. Indeed, yellow generally appears to the eye of a much lighter than blue.

Now let us, using this same ordinary plate, insert our yellow filter. If this screen is dyed deep enough with yellow, we can cut out, with normal exposure, almost all the blue radiations, and if we wanted, indeed, to get presentation of some of its action, we would have to excessively prolong the exposure, but at the same time, inasmuch as this plate is not particularly sensitive to yellow, its action also would be almost nil, and the result would be that our plate would register only the effect of the very strongest lights of the original, and we would have a very imperfect copy. You see, therefore, that the use of the yellow screen, possessed of any depth of color sufficient to diminish the excessive action of the blue, would only retard action all along the line and result in nothing of advantage besides improperly presenting the color values. So the use of a yellow screen is impracticable with the employment of an ordinary plate in connection with it. All that the yellow screen here does, and that is conditioned by prolonged exposure, is to diminish somewhat the excessive contrast between the two colors, which is sometimes improperly mistaken for correction of color values. Now let us substitute for the ordinary plate, one made sensitive to the yellow rays, but which permits, at the same time, the action of the blue, a plate which has been called, "orthochromatic." If it were possible to make a real orthochromatic plate, as the name indicates, "correct color," the problem of correct rendition would be solved. But such a plate has not yet been produced, and we must take the nearest we can get to it, by humoring, as it were, our present orthochromatic plate, which, despite every effort made, is still super-sensitive to the blue and violet. So even with this excellent means furnished us by the specially yellow sensitiveness, we have to employ a mechanical means to depress the over energy of the blue, and just

here comes in the service of the yellow filter. If we use the orthochromatic plate without the filter, we shall, to be sure, get a better action of the yellow than we could possibly with the ordinary plate. That is, the contrast will be less between the yellow and blue; but still the yellow color of the original will practically be under-exposed, while the blue gets over-exposed, so that if the exposure is prolonged, to try to get full action of the yellow, we find we have made our blue become thin in the negative. Sometimes this turns out to good effect from the reversal of the image in the blue, and exhibits an approach to proper contrast of the original colors. Notice this is effected independent of the mechanical aid of the depressing yellow screen. The dispensing of it entails, however, the necessity of prolonged exposure. Undertiming will give harshness; of course there are subjects photographed in this way, which give fairly good relations of color rendition in terms of black and white without prolonged exposure. But generally considered, most subjects demand the use of the color screen to get the approximately correct effect.

Let us take a subject which, to our eyes, presents in the blue and yellow the proper intensity in light and shade, which we wish to have reproduced in terms of black and white and intermediate greys. To effect our purpose, we shall have to study what kind of yellow screen to employ. And just here, we take occasion to say, that in the use, or rather misuse, all the trouble begins. We must use the right kind of a yellow screen or our labor is vain, and, besides, we must estimate the proper exposure to give the plate with the use of this particular screen. For if we have the screen dyed too deep with the yellow, the yellow rays alone get their innings, and the blue are defrauded of entrance to the field of action. The result is the yellow will come out too bright in the reproduction and give false value. On the other hand, if the screen is too faintly tinged with yellow, the blue gets too much advantage. If we hit upon the right degree of intensity in the yellow screen, and estimate the proper degree of exposure, we get good color results, but, if the plate, even with the employment of the correct sort of a screen, is under-exposed, we falsify results. So you see that the latitude, allowed in exposure in orthochromatic photography, is much less than it is in the case of practice with ordinary plates. We must, therefore, exercise considerable judgment in the use of orthochromatic plates. But a good worker ought not to object to the expenditure of care and judgment if he accomplishes his purpose.

The orthochromatic plate is made sensitive to yellow, but as you know, in nature there is a good deal of red mixed with the yellow in her coloration, to say nothing of the colors of artificial objects. Now the plain orthochromatic plate does not record any red color, and if used where orange and, indeed, where many artificial yellow colors are present, we find, on account of this admixture of red with yellow, that we do not get the true value of that which visually appears to us merely that color by the use of a ray filter proper for use, where the yellow is more akin to pure spectrum yellow; so that where there is present in the original, red or orange, we must substitute this panchromatic plate for the plain orthochromatic plate.



"THE UNCOMMON ASPECT OF COMMONPLACE THINGS." THIRD PRIZE, THE CAMERA COMPETITION NO. 199. MILTON M. BITTER, BROOKLYN, N. Y.



"PORTRAIT." HONORABLE MENTION, THE CAMERA COMPETITION No. 199
FRED. E. CRUM, SPRING VALLEY, N. Y.

"THROUGH THE LOOKING GLASS"

PAUL B. WILLIAMS

THE difference between a newspaper photographer and the rest of the photographic fanatics is that he has to get pictures under all sorts of conditions while they are permitted to take advantage of favorable opportunities to press the button. When the city editor says "Grab your Graflex and *git*" the press camera man has no comeback. He not only has to *git* but he has to get the pictures as well, which too often is not so simple a task as it sounds.

For instance, the paper receives a bulletin that Hon. John D. Slocum has been appointed postmaster. He is the dark-horse whom no one had picked as a possible winner in the Postal Sweepstakes and his picture is not in the "morgue." So the photographer is told to get the necessary picture. He finds, of course, that the last time the Hon. John D. had one taken was two years after he left college when they were still making cabinet photos on P. O. P. He looks altogether too youthful in that to pass for a postmaster, so a new picture has to be made.

Perhaps it doesn't rain every time that a newspaper photographer starts on such a job, but the weatherman does seem to take a peculiar pleasure in putting a "jinx" on the camera man and this proves to be one of the times. It is a cloudy afternoon, but by shoving the prospective postmaster close to a window it is possible to get enough light on his face to do business with an *f*4.5 lens. But without some sort of a reflector which is not included in the furnishings of most offices, the picture is likely to be an inglorious fizzle.

I have been up against just that sort of proposition and come back to the office with only half a man's face. The print would show one eye, a slice of the nose, part of the mouth and perhaps half of a splendid pompadour, while the rest would shade into blackness. "When you go after a man why don't you bring him all?" was the unfeeling comment of the "boss" when he saw the first of my prints that bisected the victim and left half of him to the imagination.

Having read all the rules about reflectors of cloth or paper to illuminate the shadows and having studied many pictures to get the idea, I thought the plan was perfectly simple until I tried to work it. Then I discovered one handicap to be the scarcity of reflectors when they are most needed. Also, I learned something, that in offices, maps are quite common as well as white desk blotters. Either will do in a pinch although the map is better, if you reverse it so as to use the unprinted side for a reflector.

But one day I was in an office that was shy on maps and without any blotters. It was one of those classy places where they have the desks preserved under slabs of glass so that the office boy can't carve his initials in the mahogany. Looking at the glass suggested a looking glass. Sure—they had one

in the lavatory and in a minute it appeared to help mightily in taking the boss' picture. It was set in the same position that any reflector would occupy to illuminate the shadows on a face. If a third person is available it simplifies the operation to have him hold the mirror, but lacking this help, a chair can be made to serve.

Perhaps the use of a mirror as a reflector in portraiture is nothing new, but I never heard of it until the idea came that has helped me out of many a tight place. The method of operation is very simple and the results are so satisfactory that I am using the plan whenever practicable, which is most of the time. The advantages are several. In the first place, mirrors can be found almost anywhere. It is much easier to ask the lady of the house for the mirror that hangs in the bathroom or the triple mirror her husband shaves by, than it is to persuade her to find a sheet and the necessary support to hold it so that it will do any good in picture taking.

Another point in favor of the mirror is the fact that with it you can see what you are doing. A white cloth or paper so diffuses the reflected light that not every photographer is able to tell just when he is securing the best lighting. Of course, I admit that we all ought to be artistic enough to determine that detail readily, but experience has shown that with myself, at least, the contrary is quite often the case. Because a mirror reflects the rays of light in straight lines it is possible with a mirror to throw these beams so directly



ILLUSTRATION No. 1, WITH MIRROR USED AS REFLECTOR. NOTE HOW THE SHADOWS ARE SOFTENED, YET SUFFICIENT RELIEF IS PROVIDED TO OBVIATE ANY FLATNESS IN THE APPEARANCE OF THE FACE

that you can see just where they strike the face, with the result that the desired illumination is easily secured.

Another advantage is that it permits working in very limited space, which is an important point in its favor in most offices—and in many homes, in these days of two-by-two apartments.

Professionals may object to the harsh lighting this method sometimes produces, but this defect, if such it be, is offset by the practical advantages it possesses. Reproduction for newspaper printing softens the light and shade materially, so that a contrasty picture often will print better than one which is very soft in its lighting. The simplicity of the scheme is what appeals to me, as it should to many amateurs. A newspaper photographer cannot pick and choose. He must take pictures under conditions as he finds them and make the best of them—usually working in a hurry, too. That is where the mirror makes good, for almost always it is easy to find and quick to use. The only disadvantage I have experienced is that sometimes the sitters have to be told that they are not expected to look in the mirror—they seem to think that will help them to look pleasant.

Since first trying this method I have discussed it with photographers who have criticised, and others who have praised. But so far as I am concerned, they are welcome to their opinions, as the Constitution provides. I have tried it and I know that it *works*.



ILLUSTRATION No. 2. THIS SHOWS HOW No. 1 WAS TAKEN. LIGHT COMES FROM WINDOWS AT RIGHT OF PICTURE AND IS REFLECTED BY TRIPLE MIRROR HELD BY GIRL WHO IS STANDING



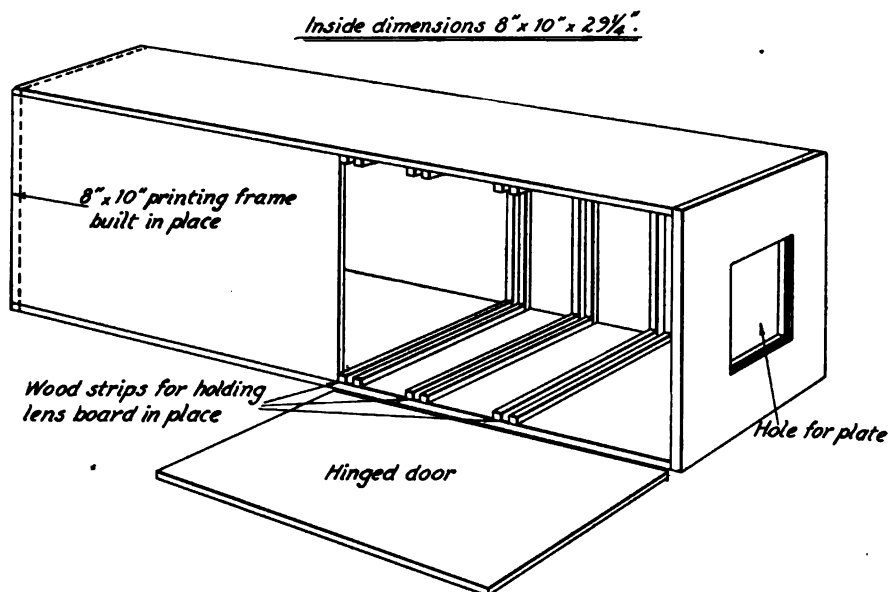
"THE WOOLWORTH BUILDING." HONORABLE MENTION, THE CAMERA
COMPETITION No. 199. C. HOWARD SCHOTOFF, PHILADELPHIA, PA.

A THREE-FOCUS ENLARGING BOX FRANCIS M. WESTON, JR.

IT is often said that necessity is the mother of invention, but I believe that if invention's family tree were traced up closely, a much less dignified ancestor would be found somewhere in the line—laziness. For instance: I wanted to build a two-times enlarging box in order to enlarge my regular size of plate—4 x 5 to 8 x 10. That was easy enough, but I also had several very small films which had to go up to 5 x 7. I was thus confronted with the question as to whether it would be better to be satisfied with a two-times enlargement of my small films, or whether I should go to the trouble of building another box for them. That was what set me thinking—the trouble of making that extra box.

At first, I had the idea of building a longer box than I needed, and providing extra slots for my plate and paper holders—but even that looked too much like work. Finally it occurred to me to find what focus my lens had with a portrait attachment on it, and therein lay the solution of all my troubles. I found the length of focus to be such that I could just get a three-times enlargement in the space of my two-times box. I went at the job of building with a light heart.

As other designers may prefer to work out the details of construction to suit themselves, I shall describe only the main points of my work. The first essential is to figure the length of box to make the desired enlargement with your regular camera lens. My lens is a $6\frac{1}{2}$ inch R. R., and I wanted a two-times enlargement, so the total distance from plate to paper is $29\frac{1}{4}$ inches, with the center of the lens $9\frac{3}{4}$ inches from the plate. Then I determined



the position of the lens with portrait attachment, to give sharp focus in a length of $29\frac{1}{4}$ inches. As an added advantage, I also used an auxiliary copying lens on my rectilinear, and found that in the length of my box, I could get a six-times enlargement of a small part of my film.

In building the box, I used boards about one-quarter inch thick, made three sides plain, fitted an 8 x 10 printing frame on one end and a plate carrier on the other, and mounted my lens on a removable board. Then carefully measuring off my calculated distances, I nailed on narrow strips to hold my lens board in the desired positions.

The fourth side of the box, from the lowest lens slot to the printing frame, I closed light-tight by nailing on a board (see diagram). The space above this was closed by a hinged door. A coat of black paint on the inside, a strip of felt around the door, and my box was complete. By simply slipping out the lens board, inserting it in another slot, and closing the door, I convert my two-times enlarger into a three-times or a six-times.

Buy a portrait attachment and a copying lens to fit your camera, and experiment a little. When locating the slots in the box, for the different combinations of lenses, work carefully and accurately; but do not feel disheartened at any slight, unavoidable variation from the true position, for by using a small stop, no effect will be noticeable in the finished enlargement.

ENLARGED NEGATIVES—"PRACTICUS"

NOWADAYS, when the efficiency of quite a small camera is recognized even for commercial work, experience in the making of large negatives should be a part of the knowledge of the photographic printer. It is, of course, perfectly true that where only a few prints from a negative are required (and those upon bromide paper), it is quicker to make separate enlargements from the negative than to make an enlarged negative and print by contact from that. On the other hand, where a large number of prints are called for, time and labor will be saved by making an enlarged negative, and the plan also has the advantage that a considerable amount of the spotting and retouching which would have to be done on each individual enlargement can be carried out once and for all on the positive transparency which is made for the production of the enlarged negative. I am thinking now of the many subjects such as interiors, garden scenes, or animal subjects which can be tackled better by using a quarter-plate camera than by taking out a whole-plate or 8x10 when prints of this size are required by the customer. For such jobs as these an enlarged negative is often of much service, apart from the necessity for it when carbon or platinum enlargements require to be made.

Quite a number of alternative plans can be followed. They are broadly divided into two classes, namely:—(1) The making of a same-size positive transparency and the production from that of the enlarged negative; or (2) the making of an enlarged positive transparency and the printing either in the camera or by contact of the enlarged negative. Undoubtedly, the second of

these methods is the one susceptible of yielding the most perfect result, although on the score of cost method No. 1 is usually adopted. Each method is further capable of variation, according as one makes the small transparency on a dry plate or by the carbon process, or uses a dry-plate or bromide paper for the enlarged negative. But for practical purposes, one's choice usually is to produce a same-size transparency either on a dry-plate or by carbon printing, and from that to make the enlarged negative on a dry-plate. Of the two plans for making the positive transparency, most workers will use a dry-plate, and therefore, I will take this method of working first.

The chief direction in which workers go wrong is in making "too pretty" or brilliant a positive transparency. For the making of an enlarged negative, the kind of transparency which one produces for lantern projection is quite wrong. It is much too "contrasty," and has too much of the high-light parts of the subject represented by bare glass or by the merest film of deposit. The kind of transparency which makes a satisfactory enlarged negative is one which, from the lantern slide maker's standpoint, is wretchedly flat. The positive transparency should be thin and almost flat, without any clear glass portions, and at the same time, with the densest parts of the subject represented by a fairly thin deposit.

While this result can be got quite satisfactorily on a lantern plate, the inexperienced worker is much less likely to err in the direction of brilliance and contrast if he uses for making the positive transparency a slow negative plate such as made by almost every maker under such names as "Landscape" or "Ordinary." A plate of this speed has usually a very fine grain—several makes are put forward as being exceptionally fine in grain—and it easily yields a positive of the kind required. On the other hand, if we are starting with a negative which itself is excessively deficient in contrast, the slow landscape plate will readily allow of improvement in this respect by cutting down exposure somewhat and developing (longer) for greater contrast. Exposure in making the positive transparency will be very short—a second or so with the printing frame several feet away from a weak source of light, such as a candle.

Every care should be taken to make the transparency with as few mechanical flaws in it as possible. See that you clean the back of the negative perfectly, dust both the negative and sensitive plate, and take more than ordinary care in avoiding dust settling on the transparency as it dries. Any spotting which can be readily done at this stage should be done, *e.g.*, clear spots or marks on the transparency. Any dark spots will print clear in the enlarged negative, and usually can be left to that stage. Naturally, any spotting which can be done on the original negative should not be omitted.

Although, as I have said, most workers will choose a dry plate for the making of the positive transparency, yet for those with any experience in carbon printing the latter process has a great deal to recommend it. Providing that the original negative is of good quality, the final result in the enlarged negative will probably be better when carbon is used for the intermediate transparency than if a dry plate be employed. The carbon transparency more

faithfully and automatically retains the quality of the original negative, at the same time yielding a transparency eminently suited for this special purpose. On the other hand, the process is slow as compared with the use of a dry plate, and is by no means so competent to deal with poor negatives, as regards making amends for their deficiency or excess of contrast. Probably those who have facilities at hand for carbon work will make a carbon transparency, but for the exigencies of much commercial work the dry plate is certainly the more suitable, because the speedier method. I need say nothing further on the carbon transparency except that the special transparency tissue should be used and developed on glass coated with a 5 per cent solution gelatine, to which a little bichromate solution has been added. This is flowed over the glass, the excess drained off, and the glasses dried in the daylight.

Our small positive transparency may be enlarged in any convenient apparatus and either by day or artificial light. For the plate on which the negative is made, there is nothing better than the slow "Landscape" negative dry plate, as used for the transparency. If an ordinary enlarging lantern is used, this plate can be readily fixed to the easel with three or four drawing-pins. In this case it is necessary to use a piece of white card the thickness of the glass plate when focusing the enlargement. There is nothing better than white Bristol board for this purpose; it allows of the enlarged image being most exactly focused. Some other materials, opal glass, for example, make it difficult to focus critically.

In the case of a carbon transparency, particular care requires to be taken to diffuse the light thoroughly by inserting a sheet of ground glass between the source of light and the condenser; otherwise the enlarged negative made with condenser illumination is liable to show unpleasant outline markings due to the relief in the carbon transparency. Well-diffused daylight, for example, reflected from a sheet of white blotting paper, is really a better illumination for the enlargement of carbon transparencies than any form of direct artificial light. If artificial light must be used then the best arrangement is some form of illuminator which works on the reflection principle.

One method of making enlarged negatives, which I ought not to omit on account of its convenience and speed, is that in which a P. O. P. print is taken from the negative and without toning or any other treatment, photographed directly upon an enlarged scale on the negative dry plate. The P. O. P. print is made of the depth which "looks right," that is to say, it is not over printed as for toning and fixing. Putting it aside in the dark you arrange matters for making the enlarged negative copy. For this a camera of long extension is required according to the focal length of the lens and the degree of enlargement required. Supposing that a 12x15 negative is wanted from a quarter-plate print, that is an enlargement of four times linear. With a 5-inch lens the extension of camera necessary will then be 25 inches. The camera should be set up and the lens focused on a little printed matter so as to give a sharp image with this degree of enlargement. Matters having been thus adjusted, the print is pinned up, the focusing finally adjusted and the exposure made.

It goes without saying that the print must not be exposed to any light unnecessarily, and to strong light not at all. Using the diffused daylight in an ordinary room the print will not suffer anything by the exposure which it gets whilst the lens is uncapped, this time lasting, at the outside, only a minute or two. Artificial light, such as that of two incandescent burners, one on each side of the print, is a perfectly safe illumination in which the print will not change unless left for a time much longer than is necessary for the exposure of the plate. I do not suggest this method as being capable of giving the best results, but for many purposes its quickness and independence of ordinary enlarging appliances make it a very useful system.

It is necessary only to mention here the other alternative methods which can be followed. I have already made mention of the plan of preparing an enlarged positive transparency and making the negative by copying or contact. This system has the very great advantage of permitting of extensive handwork upon the enlarged positive in the way of stump and crayon on the glass side of the negative, after coating with matt varnish; or parts of the transparency can be rubbed down on the emulsion film as is done with negatives—with the great advantage that in the case of a positive one can judge almost exactly what effect is being produced.

A paper negative, of course, requires to be exposed in dark slide of book form, being backed up against the rebate of the slide by a piece of stout card. By this means alone, sheets up to half-plate, at least, can be readily obtained perfectly flat in the field of the lens. It must be borne in mind that, compared with modern high speed plates, any bromide paper is quite slow, and exposures will require to be ten to twenty times those which would be given to the average extra-rapid plate.



"BROTHER AND SISTER." LEONARD L. GUIBORD, ARLINGTON HEIGHTS, MASS.

In development the chief thing is to avoid too rapid development. The superficial image which is readily obtained on bromide paper is not of sufficient intensity for a paper negative. One requires to develop further, judging the result by examining the negative by light coming through the paper. Perhaps as good a developer as any is metol-hydroquinone of formula such as is generally used for bromide papers, but with an extra dose of bromide. Hydroquinone made up with carbonate of soda is another good developer for this purpose, and pyro-soda can equally be used so long as a liberal proportion of sulphite is employed, say, five times the weight of the pyro in the stock solution.

As regards the fixing bath, this latter should preferably be one of the acid type, one of the best formulæ for which is hypo, 4 ozs., dissolved in 20 ozs. of water, with addition of $\frac{1}{2}$ oz. of potass. metabisulphite.

Little requires to be said on this head of printing beyond the fact that the grain in the paper negative, which is always present to a greater or lesser extent, requires to be masked as far as possible in the print. For this reason it will not do to print from the negatives on glossy paper. The effect of the grain thus recorded on the glazed surface of the print is particularly objectionable, but a matt paper—even one without any positive coarseness of texture—serves effectively to mask this appearance. The exposure in printing requires, as I have said, to be considerably greater than that for a glass negative, but in these days of gaslight printing when bunches of lamps are regularly used for short exposures on this class of paper, the rapid taking off of bromide prints from paper negatives presents no difficulties. The opacity of the paper can, as I have said, be reduced by oiling or waxing. A number of methods for these processes have been recommended, among which, perhaps, the simplest is to apply with a brush a mixture of castor oil, 1 oz., and alcohol, 4 ozs., to the paper side of the negative, and allow a few hours for it to soak in, re-applying, if necessary, and then laying the print for a short time between blotters. Another method is to float the negative, film up, on paraffin or white beeswax kept fluid by standing the dish containing it in another of boiling water. For my own part, I prefer to dispense with these operations.

The advantage of bromide paper in negative making is particularly marked in preparing enlarged negatives. Here the convenience of being able to cut your paper according to the size of negative required, and at the same time to avoid the weight and cost of large glass negatives, is a very positive advantage. An earlier article in this series has dealt with the methods of making enlarged negatives through the intermediary of either a contact transparency or through one of the full size of the enlarged negative. Whichever of these is used, the bromide paper will often usefully serve for the making of the enlarged negative, particularly when the prints to be taken therefrom are to be made on a paper or by a process yielding somewhat coarsely textured prints. As regards gradation, the enlarged paper negative must be expected to yield results slightly inferior to those obtained on a dry plate, but for many of the purposes of the enlarger the paper negative is capable of rendering satisfactory results.

—*The British Journal of Photography.*

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, EDITOR A. WALMSLEY CHAMBERS, PUBLISHER

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription; in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

COMPETITION No. 199

THE first award is given to Mrs. C. S. Hayden for a genre study under the caption of "Smell This," which, though not essential, inasmuch as a picture deals with things seen and needs no commentary to interpret its motive; it is an appeal to the mind through the eye in terms of form, color, light and shades. However, a title always adds interest to the study, and besides, affords the critic a means for studying the artist's ability to carry out his pictorial conception. As a picture pure and simple, this study has considerable merit and exhibits the effect produced by simplicity in the grouping. One sees the intention the artist desires to convey, and appreciates the good taste in the disposal of the material which goes to make up the study. The interest is centred, as it should be, on the figures, and the rest of the composition is kept in due subordination without too much depression, which might make it unintelligible. The surroundings are all in harmony with the main motive and the figures are presented in an easy and natural way, perfectly free from all affectation or attempt to make them do anything further than the simple action they are engaged in. In a word, the most pleasing feature is this naturalness of the models. There is no suggestion of set pose nor exhibition of any consciousness that they are there for the sole purpose of being photographed. The illumination is excellent and brings out well the salient features, and preserves the characteristic expression.

The Second Award is given to Suisai Itow for "A Relic of the Past." An interesting subject, and one well managed, showing excellent judgment and taste in the disposal of the rather difficult elements of the picture. The action of the animals is well expressed, and the idea of progression well conveyed. There is suggestion of movement all along the line, which is further indicated by making the trend of the roadway oblique. Action would have been lessened, if not entirely destroyed, by a parallel presentation of the team with the line of the road.

The Third Award is given to Milton M. Bitter for "The Uncommon Aspect of Commonplace Things." The artist here certainly deserves high commendation for his pictorial management of a subject which, in itself, would not suggest a motive for a picture. The elements of the composition are ordinary and commonplace, but the skill in the disposal gives us a pleasing combination and an unexpected unity, and all through good, legitimate,

photographic work. It was a good idea to make the railroad trend off obliquely. Its termination is somewhat indefinite at both ends, so that when the eye follows it along, there is no annoyance at a sudden break, which would inevitably have occurred had the pictorialist made it strike at the bottom of the picture instead of going off, as it does, a little to the left. This device suggests that the track is continuous, and causes our view to be directed to its trend off under the bridge where it curves and still further carries the eye into the far off. This gives depth to the view and excellent perspective. The sky is effective and further intensifies the effect of distance by its aerial perspective. It recedes, as it should, and gives us the impression of atmosphere, which all good landscapes should possess. Mr. Bitter is entitled to much commendation, both for his display of artistic ability, as well as for his excellent technical rendition.

First Honorable Mention to Fred. E. Crum for his portrait of "A Boy"—a pleasing child study, and a good piece of photography. The lighting brings out well the infantile characteristics, and is particularly charming for the expression upon the face of the little one.

Second Honorable Mention to Alice M. Willis for "The Mantle of Fog." The distribution of the masses of the picture is well considered in their relation to the whole composition. The architectural feature is particularly pleasing, but, unfortunately, the attempt to improve certain passages here and in other parts of the subject has resulted in hurting the general effect. They at once attract the eye, and being so out of relation to the general tone of the picture, they stand out most prominently and unpleasantly, forming ungainly spots just where the subject should be most reserved.

Third Honorable Mention to C. Howard Schotofer for his photograph of the Woolworth Building, New York City. The structure itself is well brought out, but the general effect is marred by the surrounding of the dark archway, and the obnoxious and obtrusive lamp-post projected directly against the building. To be sure, such impediments are not controllable by the photographer, but the critic is not responsible for their admission, and must judge solely by the effect produced by the association. A painter could eliminate such distractions, which the photographer is constrained to admit. His only recourse is to select a better point of view, uninvaded by objectionable features.

WE are excluding, from awards, the photograph made by Milton M. Bitter, Brooklyn, N. Y. The photograph was awarded Third Prize in our Contest No. 199, but, unfortunately he entered this same photograph in another competition—consequently, it is disbarred, and the Third Prize is awarded to Fred. E. Crum of Spring Valley, N. Y., for his interesting child study, which we print on page 32.

Contestants must understand that we will not accept photographs in our contests that have won prizes in other competitions. Fortunately, we were in a position to eliminate this award, and tender the small prize where it is deserved.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1077. *W. C. Dance.*—"Twins." The figures, while good in themselves, do not contribute anything in the way of motive to the subject, and suggest that they were merely asked to pose and look pleasant. The great mass of tree-trunk, with its unrelieved darkness, adds nothing to, but rather detracts from the interest which ought to be centered in the girls.

1078. *Bruno Brauner.*—"Georgetown Canal." A rather good composition, but a trifle hard. A less intense illumination would



No. 1077.—*Data.*—3A Kodak; Cooke-Kodak lens; f6.3; September 1 P. M., good light; $\frac{1}{2}$ second exposure; N. C. film; metol-quinol; Azo F soft print; double exposure on same subject, taken with a "duplicator;" $\frac{1}{2}$ second each exposure.



No. 1083. *Data.*—Seneca Competitor View, 5 x 7; Versar lens; f6; October 2 P. M., good light; 6 seconds exposure; Seed 30 plate; Eastman special developer; Azo print; the lens used was $6\frac{1}{2}$ x $8\frac{1}{2}$ on 5 x 7 camera to give truer perspective.

have presented it with less contrast. Some incident, along the tow path, such as mules with the drivers, would not only have given the balance the picture needs just in this part, but would have put some animation in the scene.

1079. *John Ziegelbauer.*—"Autumn." A good piece of photographic work from a properly developed plate. The subject too is pleasing, but the large stack is a little too much in the centre of the picture. A view somewhat more to the right or left, so as to give us the uninterrupted line of the hills would have made better composition.

1080. *C. J. Liebel.*—"An Interrupted Siesta." The motive is good, but the composition is bad. The partial introduction of the dog is very annoying. He is too much out of the picture to have any conceivable part in the motive. Indeed, he seems to think as much himself. The cat is a better actor, and



No. 1086. *Data.*—Conley, $3\frac{1}{4} \times 5\frac{1}{2}$; $f/8$; October 2 P. M., bright light; 8 seconds exposure; Azo soft print.

if you will just exclude the uninterested, and to us uninteresting, canine by the use of the vertical line, you will have a good cat study.

1081. *Ben Wallers.*—"Contented Cows." A very poor composition, and also a hard, unpleasant photograph in black and white. The grouping of the cows is bad, and the unsightly bridge very bad, especially as you had no need to introduce it.

1082. *M. J. Madden.*—"Portrait." This is an example of cast iron work. Hard, wirey, and very unpleasant. The illumination is too intense, hence, the black, harsh shadows and chalky high lights. In all probability your subject was a good one. His expression, as far as your bad work will permit us to judge, gives indication of animation and intelligence, and it is a pity he did not receive better treatment.

1083. *Paul R. Bricker.*—"Richard E." The pose of the upper part of the figure is rather good, but the surroundings are too bald, and not at all suggestive of an interior. We wonder what purpose the man has in view to be where he is, and we come to the conclusion that he has been invited there solely to get his photograph taken, and this is the last thing desirable in a picture. In a word, the subject is motiveless, and, hence, uninteresting. The photographic quality is very commendable.

1084. *Mrs. Jas. H. Owen.*—"Melba." A well posed head, and one nicely spaced. The copy in the oval is preferable on account of the exclusion, thereby, effected of the unpleasant junction of the truncated arm and the body. The effect is soft, but in our opinion, we think much of the excellency is eclipsed by the unnecessary blurring of the features. It is all right in the drapery, but the features demand more pronounciation. Diffusion is sometimes effective, but improper application is destructive of effect.

1085. *B. F. Bianchi.*—"White Birches." The foliage at the top of the picture throws the composition out of balance, and brings its dark mass of undifferentiated shadow in too great contrast with the blank white openings, representing the sky. The effect of distance and atmospheric perspective is destroyed thereby. The roadway is the best feature in the view. The flecked shadow is very pleasing, but its continuity is broken by the stop-gag in the shape of a carriage. The vehicle furnishes no incident to the motive, and is entirely unnecessary, besides being obstructive.

1086. *Wm. J. Schmitt.*—"Portrait." General pose good, but the management of the hands poor. They are too close together, and the showing of both unnecessary. The background setting is very inappropriate and unpleasant from its abrupt division into black and white. The photograph would have been improved had you made it more distinct. Indistinctness in parts is often essential to



No. 1088. *Data.*—Goerz Tenax, $3\frac{1}{2} \times 4\frac{1}{2}$; Dagor lens; $f/8$; October 11 A. M., bright light; $\frac{1}{2}$ second exposure; plate; pyro; glossy Velox print.



No. 1090. *Data*.—None.

pictorial effect, but general blurring is no indication of artistic taste, but evidence rather of affectation for conformity to the fuzzyites.

1087. *Harrison P. Turrell*.—"Landscape Study." Quite a soft and pleasing effect. The foreground is particularly interesting and attractive, and the winding stream an especial feature. The balance of the parts of the view is well considered. The only suggestion of improvement would be in the rendition of the distance, the definiteness of the hills causes the distance to approach the eye too abruptly. It should have been presented more in haze, and then it would have suggested the intervention of atmosphere.

1088.—*Frank James Rascover*.—"Her First Lesson." The picture of the child is quite good. The little one has been caught at the proper moment, and exhibits her individuality. The photograph, however, is entirely too contrasty, too black and white, and the accessories angular and unpleasant. The background too is inappropriate, and in too much contrast with the dress. Note particularly the unpleasant right angle made by the lines of the lamp and the cushion of the chair.



No. 1092. *Data*.—Graphic 4 x 5; B. & L. Plastigmat lens; $f/32$; July 11 A. M., bright light; 1-5 second exposure; Standard Orthonon plate; Cyko sepia print.

1089. *Joseph P. Saxe*.—"Puppies." An excellent piece of photographic work, and also a pleasing study of animal life, natural and characteristic, and full of variety of attitude and expression, and at the same time provocative of humor. You deserve much credit for the pleasing management of such a bunch of troublesome subjects.

1090. *N. H. Schummel*.—"Study." The right hand portion of the photograph detracts from the effect of the left portion. The repeated lines of the tree trunks, and the



No. 1095. *Data*.—3A Hawkeye; Zeiss Tessar lens; $f/8$; July 1.30 P. M., bright light; 1-5 second exposure; film; pyro tray developer; buff Cyko print.

regularity of the railing and pavement are particularly annoying. If you draw a line down almost in the middle of the view and confine your attention to the parts on either side you will see how much more interesting one part is than the other.

1091. *Marion Freys*.—"Sheep and Shepherd." The composition is pleasing, and the general management of the little flock with the shepherd commendatory. The distance to the right is nicely brought out with suggestion of atmosphere.



No. 1099. *Data*.—Seneca, 4 x 5; *f*16; October 2 P. M., dull light; 8 seconds exposure; Cramer plate; Rytol developer; Cyko print.

1092. *P. J. Schweickart*.—"Summer." The photograph is unnecessarily harsh. There is not a show of atmosphere in the view, and one naturally looks for atmosphere in a Summer landscape. The sky is flat and blank, and unpleasantly contrasty with the flat foliage of the trees. The cattle are photographically well rendered, and in natural attitude, but the effect is spoiled by the identical, or almost identical, postures. The one cow to the right is the better, and the view would have been more artistic by the exclusion of the other.

1093. *P. E. Brower*.—"Risky Work." A rather pleasing picture, with the figure well placed in relation to the rest of the view. The foreground, however, is cut off too abruptly. More of the lower part of the figure should have been introduced, and more room accorded it. It is unpleasant to imagine no support for the model. It suggests a want of equilibrium.

1094. *Ken. Muchima*.—"Our Old Swimming Pool." A good photograph of an instantaneous view showing the action in variety. A little more art might have been manifest in the treatment of the subject. It is the province of art to suppress in some particulars, which at times are in too much



No. 1104. *Data*.—Mentor Reflex; Busch lens; *f*11; October 4 P. M., fair light, cumulous clouds; 1-25 second exposure; Paget 5X plate; Rytol developer; Victor soft print.

evidence. The subject is a trifle, if not more than a trifle, too realistic in the presentation.

1095. *Burdette Harrison*.—"The Brooklet." Generally pleasing as a study of trees and shrubbery, but not possessed of sufficient light and shade to give it pictorial effect. The monotony of the tone prevents the different textures in the view from being properly expressed. The rocks, trees and waters are all of the same quality, and undistinguishable from each other, merely indicated by their particular forms. In a better light, and at a time of day other than so near noon, you would have gotten more light and shade.

1096. *Carl Finster*.—"October Landscape." The little less than one-half of the picture to the right of the vertical line we have drawn,



No. 1096. *Data*.—Korona V, 4 x 5; rapid convertible lens; *f*11; October 4.30 P. M., good light; 1 second exposure; Standard Orthonon plate; M. Q. developer; studio contrast Cyko print.

is not only useless to the composition, but detrimental. You may notice what a great improvement is effected by its exclusion. Not only in the composition itself, but also in the perspective of the view. It gives more dignity and interest to the scene, and really makes it an interesting picture.

1097. *W. D. Sell*.—"The Turn of the Road." It is unfortunate that the telegraph pole and automobile sign obtruded their obnoxious presence. But then we blame them both less than yourself for selecting a view so handicapped for pictorial expression. Selection is two-thirds of art success, and the artist cannot blame nature or human interposition of discord for exhibition of want of taste in his work.

1098. *A. E. Cheesman*.—"Vale of Cashmere." The planes of the picture are too much in a uniform diffusion of focus to be acceptable to our personal appreciation. The various parts do not recede as they should to be in conformity with what natural vision presents. But we are willing to admit that this universal diffusion is in accord with the teachings of the impression cult with which we have never been in harmony. Our inability to appreciate, however, must not be taken as a criterion in criticism, and doubtless your picture would receive commendation from the exponents of impressionism.

1099. *Edward Bulger*.—"Ella." A very good picture, and a good, artistic story of a child. The expression of the little girl is particularly pleasing. One does not often meet with a portrait so free from self-consciousness and possessed of such natural and characteristic features. Altogether a most excellent piece of work.

1100. *W. E. Rabenhorst*.—"A Bit of Winter." The subject does not compose well. The bare boughs may be suggestive of winter but do not lend themselves to pictorial effect. The quality of snow is very inadequately presented, and the shadows are harsh and unpleasant. Read some of the papers published in *THE CAMERA* for 1914 of the proper method of photographing snow and ice scenes.

1101. *Ken. Muchima*.—"When Nature Paints With Shadow." Quite an unusual effect, and rather pleasing from the novelty.



No. 1102. *Data*.—No. 3 Hawkeye; time exposure; October 4 P. M.; film; metol-hydrochinone; Rotograph enlarging "D" print.



No. 1106. *Data*.—None.

The photograph suggests a Japanese picture. We think that the effect would be further increased by a little more haziness in the distant foliage. It would give the appearance of atmosphere and suggest depth better.

1102. *W. K. Oberholtzer*.—"Path In the Woods." The view is too uniform and flat. There is no distinction of light and shade, but only one monotony of tone. The distance is entirely destroyed. The composition has no balance, all the parts are in a jumble. The eye is led nowhere, and the unpleasant crossing of lines is particularly annoying.

1103. *Henry L. Price*.—"The Brook." The composition is pleasing, but the negative has been carried too far in development, resulting in hardness and too great uniformity of tone. A softer development would have registered more half-tones.

1104. *W. R. Clendinning*.—"Snow Peaks Above the Moraine." This view exhibits well the mountain structure, and for this reason would be more interesting to a geologist than an artist. There is too much contrast and hardness, and such total obliteration of atmosphere that no pleasure is possible for artistic enjoyment.

1105. *Geo. S. Buell*.—"The Brook." The composition is rather pleasing, but the view is poorly illuminated, devoid of shadow, and so gives neither suggestion of relief or atmosphere. Everything is in one plane. No receding of one part from another. The whole effect is flat and tame. A landscape should never be photographed under a vertical sun. We have the opinion that this view, taken



No. 1108. *Data*.—Auto Graflex, $3\frac{1}{4} \times 4\frac{1}{4}$; B. & L. Zeiss Tessar; $f/32$; October 4 P. M., fair light; 5 seconds exposure; film; M. Q.; Azo F hard print.

very early in the morning or after three o'clock in the afternoon, would have been quite pleasing.

1106. *Helen Willaume*.—"A Prize Boy." Excellent results, considering the conditions under which it was taken. Of course, the accompanying accessories are hardly in relation, and the little fellow is in a dangerous position of unstable equilibrium. We would like to see the little chap better associated, with surroundings more in accord.

1107. *J. W. Mc Namara*.—"A Misty Evening." A very effective composition, both in linear and aerial perspective. The view of the city is particularly pleasing. The natural haziness is much more pictorial than all the effects attempted to produce artificial indistinctness could present. There is nice variety here in varying degrees of shade,



No. 1111. *Data*.—Korona, 4×5 ; $f/45$; November 2 P. M., bright light; 2 seconds exposure; Hammer Red Label; pyro developer; Instanto soft print.

not one uniform smudge, which the pseudo-impressionists try to persuade us is Nature's method for conferring sentiment.

1108. *Wm. H. Quinter*.—"The Curve." This view is interesting to a railroad constructor as an evidence of good bed construction, but has little interest as a picture, though excellent as a technical piece of work with the camera.

1109. *Francis A. Francis*.—"Department of Streets." "On the water-wagon" would be a better title, unless you mean the country store is the "department." The horses are somewhat distorted in their anatomy, due to the focal length of your lens. The subject,



No. 1112. *Data*.—Premo No. 6, 5×7 ; Planatograph lens; $f/8$; July 2 P. M., bright light; $\frac{1}{4}$ second exposure; Seed; pyro tank; studio Cyko print; 4 feet from window, with southwest exposure, light subdued by screening.

too, might be improved by being in a softer light. The shadows are particularly harsh, and there is little or no gradation in the photograph.

1110. *Edw. E. Whibley*.—"Sunlight and Shadow." The composition is too formal to be pleasing. The regular recurrence of the trees in a line, each tree equally distant from the other, is not only suggestive of bad landscape gardening, which ought not to be perpetuated photographically, but is exceedingly annoying to the artistic eye. Besides, while there is some evidence of shade, there is none at all of sunshine. Why the title? The

monotonous stretch of uninteresting foreground is most unpleasing, and the sky is one blank.

1111. *William D. Sell*.—"When Summer Bids Farewell." Bare boughs lend themselves very poorly to art photography. They are a better subject for the poet and moralist. The recurring vertical lines, unrelieved by masses of foliage, become monotonous to the eye, and, hence, affect us unpleasantly. Your photograph, however, is a good piece of technique.

1112. *G. E. Totten*.—"Vivian." A well posed figure, and in some particulars, well lighted. The face, however, is a little too much to the front. A slight turn of the head to the right would have brought out the features better and have done more justice to the nose, and at the same time, have improved the whole subject. Another means of improvement would have added to the picture; that is, a less intense background. It is so intensely dark without a particle of gradation, that the figure is fairly cut out against it.

1113. *James A. Mountain*.—"Three Views." According to your data accompanying the prints, you give the conditions of exposure as "hazy," but the photographs do not con-



No. 1116. *Data*.—Ansco No. 3; f16; October 4.30 P. M., bright light; 1 second exposure; film; Rytol developer; velvet bromide enlargement.



No. 1114. *Data*.—Ansco Speedex, $3\frac{1}{4} \times 5\frac{1}{2}$; anastigmat lens; f6.3; November 2 P. M., good light; $\frac{1}{2}$ second exposure; Eastman speed film; Eastman tank; Azo hard, glossy print.

vey this condition of atmosphere, but suggest fogginess of negatives. In natural haziness, unless there is a decided fog, there is not this uniformity. The contrasts of course are subdued considerably, but foreground and distance are never of the same intensity. The rendering of a hazy scene by photography is rather difficult, and demands much experience of a practical nature to make the effect pictorial. Only advanced pictorialists attempt such subjects, and the conditions have to be patiently waited for to get the desired effect. The photographic film emphasizes the fog too much. Until one has had considerable education in this direction, it is not well to try his hand at such difficult work, but to confine effort to subjects under ordinary lighting.

1114.—*Clayton Wyatt*.—"Writing to Dad." The study of the little boy is well managed to bring out the motive, which is one quite in harmony with the doings of childhood. The accessories which assist in interpreting the motive might have been better presented. They do not indicate at a glance what the action is. We perceive this only after some study of the picture. The boy, himself, is the best feature. He is perfectly natural, and the expression is captivating, but the triangular arrangement of the table cover with the great mass of uninteresting blank whiteness, attracts the eye away from the peculiar charm of the picture of the boy. The background is also another blank of dark in violent contrast

with the white blank. The table appears without any visible means of support, hung in mid air.

1115. *Joseph Truble*.—"The New Broom." The print is excessively hard, giving one an idea of a casting of a child in metal, rather than a suggestion of flesh. This is due to your using too strong a light and developing the negative too intensely. The posing is bad also, the broom serves no material purpose to interpret your topic, and besides, forms a very unpleasant line. The background is very bad. Nothing but a series of bars which cut up the subject in little segments. The other photograph has also a poor background. Things seem to be toppling over around the poor little fellow, despite his enjoyment.

1116. *W. M. Tomkins*.—"The Pond." We can hardly call this a composition, as there is particularly no distribution of parts, no unity of the elements. The unsightly tree trunk, right in the centre of the picture, at once attracts the eye unpleasantly. It is a bad feature and ought not to have any prominence. And besides, it is repeated in the reflection in the pond, and the juncture makes a most disagreeable, obtuse angle.

SECOND ANNUAL EXHIBITION OF PHOTOGRAPHIC ARTS

At the Second Annual Exposition of Photographic Arts and Industries to be held in Cleveland, Ohio, during the week of March 6th, in connection with the Fourth Annual Convention of the Photographic Dealers' Association of America, considerable attention will be paid to the exhibition of representative photographs in the Photographic Competition to be held under the auspices of the Photographic Dealers' Association of America.

The fact that this Exposition will be attended by at least 150,000 persons, in addition to the delegates to the convention of the Photographic Dealers' Association of America and numerous manufacturers and industrial representatives, gives an unusual and interesting aspect to this feature of the Exposition.

The prints for this contest will be suitably arranged and hung by a Committee of men who have had experience in the display of photographs, and every effort will be made to present the merits of the pictures to the best advantage.

Cash prizes, accompanied by a Diploma, will be awarded to meritorious exhibits in each class. Diplomas of Merit will also be given to all prints rated above 75. The awards will be made by a Jury composed of three well-known amateur and professional photographers.

The Professional Class will be open to Professionals only. This class will be confined to professional portraiture, and limited to five pictures from each entrant.

The Amateur Class is open to Amateurs only, and will comprise amateur prints of

every description, limited to five prints from each entrant.

The following cash prizes will be made in the Professional Class: \$50.00 cash, first prize; \$25.00 cash, second prize; five \$5.00 cash prizes for the next five best prints. Each of these awards to be accompanied by a Diploma. All other prints of merit will receive a Diploma of Honorable Mention.

The following cash prizes will be made for the Amateur Class: \$50.00 cash, first prize; \$25.00 cash, second prize; and five \$5.00 cash prizes for the next five best prints. Each of these awards to be accompanied by a Diploma. All other prints of merit will receive a Diploma of Honorable Mention.

To avoid needless repetition, and to keep the exhibition upon the high plane desired, only such prints will be shown as have passed a competent Examining Board, composed of prominent artists and photographers.

The Exposition Management believes that the opportunity afforded photographers to display their work under the reasonable rules formulated for this competition to such a large number of interested people, will induce a liberal representation in all its branches. Prospective exhibitors are urged to send for entry blanks without delay, so that preparations can be made for the proper display of their pictures. Address all inquiries to the Print Committee, International Exposition of Photographic Arts and Industries, 241 Engineers Building, Cleveland, Ohio.

GREEN TONING OF BROMIDE PRINTS

As green toning with direct baths has not been found very satisfactory, recourse is had of late to combined baths, such as uranium with the blue print process; but these also fail to give full satisfaction. M. Kugler recommends iron-blue toning, followed by sulphur toning, making a third handling of the bromide print necessary. The fixed and washed print is first bleached in the following bath:

Potassium ferricyanide.....	5 grams
Water.....	100 ccm.
Ammonia.....	5 drops

It is allowed to remain in this until the picture becomes a light brown, and is then washed until the lights are free from yellow coloring; it is then put in the following blue toning bath:

Citrate of Iron and Ammonia.....	2 grams
Water.....	100 ccm.
Hydrochloric Acid.....	5 ccm.

The bright blue print is again washed and placed in an acid solution of sulphide for five minutes:

Sodium Sulphide.....	1 gram
Water.....	100 ccm.
Hydrochloric Acid.....	5 ccm.

The acid sulphide bath is necessary, as otherwise the Prussian blue would be attacked. Finally, wash again briefly.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

It is stated, on good authority, that twenty-four thousand two hundred and eleven people crowded into one movie house in New York City *in one day*.

Without the assistance of the free lance writers, our magazines and periodicals would lose a great deal of the attraction they at present hold. It is the same in regard to educational motion pictures.

The photoplay producers, being business men, have followed the lines of least resistance. In saying this, however, I do not wish to reflect upon a body of upright men. They started out with the idea of entertaining the masses, so they naturally turned their attention to comedy and dramatic stories. With the passing of time, their product began to show signs of improvement and a superior type of patron favored the motion picture theatre. The producers then gradually educated the old stagers to appreciate more substantial photoplay fare than pure romance.

Europe was first to cater for this demand by producing short educational. These covered such subjects as natural history, native customs, popular science, industries and floriculture.

As is generally the case, experience had to be purchased, so instead of a subject being treated in a highly entertaining manner, like the magazines and newspapers so ably do, the producer, in too many cases, failed to deviate from the text book. His productions were right in line for educational purposes, but they were not palatable enough for general consumption.

The American producers, in view of these developments, declined to break down the prejudice which came to the surface.

Enter, then, the third party, the free lance cinematographer, who was not hampered by having to adhere to a releasing schedule. He might have certainly worshipped the guide book when combining pleasure with business on a vacation, only he did not—albeit to his advantage.

In order to get out of the beaten track, he knew that he would have to rely upon his own powers of observation, so when he ran up against something out of the ordinary, he capitalized it on the spot.

It would take a bulky volume to record all the accomplishments of the numerous free lance cinematographers to date. Unquestionably the most amazing undertaking is due to the enterprise of the Williamson Brothers,

who, in 1914, perfected their submarine tube apparatus.

All the underwater pictures up till then had been taken in tanks and aquariums, so they determined to obtain the last word in realism. They quietly set to work in the Bahamas, where the water is as clear as crystal and the undergrowth a thing of beauty, to reveal for the first time what it is like in King Neptune's domains.

Divers had been the only privileged folks to view this sight, but all the same, a photoplay audience would soon grow tired of viewing the same thing too long. It was to offset this that such stunts as natives diving for coins, species of fish, sponge fishing and a fight between a man and shark were added to introduce the desired variety. To prove that there was no fake, the first reel of the picture was devoted to a demonstration of the clever invention.

Of big game hunting pictures in Africa there have been many, the best being obtained by Paul Rainey, Cherry Kearton and Lady MacKenzie.

The Arctic regions have been well combed, while Edward Salisbury spent three years in filming the wild life of these United States.

The motion pictures of the ill-fated Captain Scott's South Pole Expedition were of unusual interest and served to introduce the film in a new usual capacity. H. C. Ponting, the camera man, recorded all the activities of the expedition up to the time the Southern party made their fatal dash. Although none of the gallant party came back to tell the tale, there was one consolation, they could be seen in harness until they left their comrades.

Coming right home, Professor Ditmars makes a hobby of taking natural history pictures. His position as curator at the New York Zoological Gardens provides him with abundant facilities for this sort of thing. Tying with spiders and running the gamut to snakes is as tedious as it is dangerous.

Dr. George A. Dorsey has completed a brilliant piece of work in his series which covers China, Japan and India.

The efforts of these free lances have done much to disprove the assumption that the motion-picture-going public would not stand for more than five minute doses of educational. Most of these big productions, occupying the screen for two hours, have been the star attractions at the leading theatres in New York, Chicago and London. This lies

principally in blending the human interest material with the facts in an unusual subject.

Had these cinematographers been working for the regular motion picture manufacturers, they would, in all probability, have been deprived of the credit for their efforts.

Even to-day the average regular producer has not a true conception of the right qualities for an educational picture, for he attempts to bolster it up with an apology for a story.

I must not, however, permit my sense of fairness to run astray, so will state that he excels in producing one type of educational, the historical. His long experience in putting on comedies and dramas qualifies him to reconstruct the past.

To get down to the point, is there any chance for the free lance motion picture photographer to make good in this special field? There is, if you have new, practical ideas. What is wanted to-day are things which have never been filmed. Just because almost the entire globe has seemingly been covered, is not to imply that little else remains. There are, for instance, in this land of wonderful natural resources, historical places, scenic places, industries and natural history galore which have yet to be immortalized.

Some of the regular producing concerns are always open to purchase the negatives of good subjects at a fair price.

Should you ever visit St. Louis, you may run across the living image of Lillian Walker, the popular Vitagraph player. She is Naomi M. L. Sacha of 3883 Utah Avenue, St. Louis.

"Everyone is supposed to have a double," said the original 'Dimples,' "and I am glad that I found mine under such pleasant circumstances.

"We photo players usually get acquainted with ours when we hear reports of persons who impersonate us in order to obtain money and goods on the crook. This kind of double does us no end of harm. Miss Sachs, however, was only induced to come in the limelight through a campaign for doubles, commenced by a motion picture magazine, and I already regard her as a friend.

"We photo players sometimes have to double in productions, and there are only two methods by which to accomplish the stunt.

"The double exposure plan has its limitations in that one character cannot come in personal contact with the other. As the one scene necessitates two distinct takings, and the two negatives are afterwards joined together, we have to imagine the exact position where our double is and act up to it.

"The work is most exacting, for if our actions are not perfectly matched, the illusion is spoiled. We often underact to be on the safe side.

"To come to the second method, this, while easier to put over, is not so satisfactory. You do not see us in the same scene together, but instead, a lot of flashing to and fro has to do duty.

"It is easy for the director to obtain types,

but doubles baffle him. We, therefore, have to be two players in one. Even if a director obtained a genuine double, lack of experience would offset the advantage gained.

"The director would hardly care to allow the double to play opposite the star, without breaking the former in, and very few directors have the time to do that nowadays, so the double problem continues to give us restless nights."

The photo play director has three methods by which to produce a fire picture without having to burn down a real house for the purpose. He may hire an empty house for a short period and place a chemical preparation, "smoke pots," to use studio slang, behind the curtains. Then volumes of smoke begin to issue from the windows and the firemen get busy. The interiors are taken in the studio, and here the forks of flame are suggested by colored lights.

If he wants to show the house burning down to the ground, all he has to do is to substitute a miniature model of a house itself, nearly four feet square. This is placed in front of a black cloth, and the flames are the results of the director's ingenuity.

Now and again he looks over old editions of the animated newspapers, and if there are a few scenes of a real fire he will secure the same and combine them with the other portion of a photo play.

About a year ago Charles A. Birch-Field, the illustrator, was asked by one of the film companies to draw some cartoons to be reproduced in their films. He agreed, and proceeded to take what he imagined to be short-cut to easy money. The task was the drawing of several cartoons (not the animated ones) that you see now in almost every pictorial news-weekly. The subjects were to be the latest styles, treated satirically, as well as events that come under the head of caustic pen comment.

At the time that he was asked to do this work, the method of procedure was about as follows: A drawing board was arranged under a battery of high-powered illuminating lamps, with the camera rigged up directly overhead, the lens pointing downward and focused on the drawing board. About sixteen pictures per second were thus made, more than ten images per second appearing as a continuous image to the eye. As the average cartoons for the weekly news picture may occupy one hundred feet of film, and as, further, a fraction more than a foot per second travels through the projecting machine that throws the image on the screen, one thousand seven hundred different photographs must be taken. This is done automatically, in most studios, simply by pressing a button each time a picture is taken.

He set about finding some way that would make the work less arduous. As a result he has devised a very promising process. First an enlarged photograph is made of the cartoon or drawing to be reproduced, the size

of the enlargement being fourteen by eighteen inches. This enlargement is dipped in a bath of bichloride of mercury, washed in water, placed in a solution of hydrofluoric acid, rinsed again, and lastly, treated in a bath of bichromate of potassium, dipped in water, dried, and placed flat upon the drawing board. As in the old method, the camera faces the drawing board, lens down, the drawing having completely disappeared from the enlargement. Lamps are ranged on either side of the board for the required illumination, and all is ready for the actual photographing of the cartoon.

With a fountain pen filled with ammonia, the original lines of the enlargement are re-traced in the manner illustrated, exactly as they appeared prior to their chemical erasure. They reappear as by magic. The original drawing (or a duplicate enlargement) is used to guide the hand along the original lines. A slip does not matter; no mark results where there is no line beneath.

The cartoon is photographed by a continuous revolution of the camera crank, and a gradual and seemingly natural line drawing, at whatsoever point the pen is applied, results. It takes just four minutes after the prepared enlargement is on the drawing board, supposing that we are dealing with a subject one hundred feet in length, to make a film negative ready for the developer and printer.—*Popular Science Monthly*.



The three small cuts show the steps in producing the finished effect of a rapidly drawn animated cartoon. At the left is the original drawing; the middle cut is the drawing washed out by chemical baths; at the right the ammonia-filled fountain pen is bringing the cartoon back to life.

The incident of the young Confederate's release by President Lincoln's order, which gets a round of enthusiastic handclapping when presented in "The Birth of a Nation" was verified as an actual historical event by one of the spectators. G. L. Mordecai, of New York, is the man to whom it happened. After he had seen the production, he visited

D. W. Griffith's offices and told this remarkable story:

"My father, a wealthy trader of Charleston, S. C., was engaged in extensive blockade-running in the Confederate army, but had been honorably discharged on account of sickness. My father then wanted me to go as his agent to Nassau. The only channel of intercourse was closed, however, when the Federals captured Fort Fisher, so father suggested that I would try to slip through the Northern lines and thence take steamer from New York.

"In civilian dress I managed to elude the Union pickets in Virginia, crossed the Potomac, took stage for Washington, but in the latter place I was arrested and thrown into prison as a Confederate enemy. It was feared that I would be court-martialed and executed, or at best held prisoner until the close of the war. My fiancée's father, Alderman Samuel Lewis of New York, later acting Mayor, came to Washington and worked in my behalf. Notwithstanding Secretary Stanton's opposition, he succeeded in convincing President Lincoln that I was not a spy. 'I will release the young man,' said Mr. Lincoln, 'on one condition, that he takes oath not to return to the Southern States during the war.'

"I gladly took this oath and was released. Before leaving for the North for my marriage and residence in Alderman Lewis' family, I desired to thank President Lincoln. I remember he shook me by the hand and said: 'I am happy to know that I have been able to serve an enemy.' I have never forgotten the great President's generosity and kind-heartedness to a foe, and when I saw the picture, that early experience was vividly unearthed."

The introduction of the moving picture machine as an aid to the modern educational system has proved so popular in a Philadelphia public school, that its general use is predicted by the educational authorities.

The principal of the school called the attention of the Parents' Association to the good that might be achieved through use of the machine. The members considered the subject and finally decided to raise the funds necessary to purchase a machine. There have been two exhibitions of pictures and those who have attended for the purpose of studying the ultimate benefit that may be derived from the exhibitions and have afterward examined the pupils who were present are enthusiastic over the results.

Each exhibition is accompanied with a descriptive address, and examinations upon the subjects taken up have shown that the smaller pupils remember what was told them much better than if the subject had been taken up in the regular study courses. Subjects of historic interest have been shown, some of them far in advance of the grades of some of the pupils, but the results have been very satisfactory.

The movie exhibitions for the children are held during school hours, and at night the performance is repeated for the benefit of the parents.

Educational authorities say the greatest difficulty at present is the lack of suitable subjects. In addition, the expense of securing films is no small item. Both obstacles, it is anticipated, will be met with when the demand for this character of films becomes stronger.

Motion pictures are being utilized at the State Hospital for the Insane at Massillon, Ohio, as an aid in the restoration of lost human minds. The idea for such utilization was conceived by Dr. H. C. Eyman, superintendent of the hospital, and was recently put in operation.

Several motion picture machines were purchased, and, to begin with, exhibitions were given to the least afflicted patients. A lively interest in the pictures was aroused among most of these patients. This was taken as a good sign.

According to Dr. Eyman, the commonest form of insanity is where a mind becomes fixed on some one subject or hallucination, and refuses to take interest in any other thing. If a mind can be aroused from its fixity the afflicted one is on the road to recovery.

Some of the simplest comedy pictures were chosen for the first experiments. Later, Dr. Eyman showed several educational and travel pictures. In course of time some of the patients began to ask questions about the pictures.

"The few experiments I have made have convinced me," said Dr. Eyman, "that motion pictures are going to prove a great aid in the restoration of lost human minds. With pictures I have broken through the crusts of some minds here under my care which heretofore have been impregnable. With a diseased mind once opened it is possible to advance, by gradual process, certain bits of information which will eventually set the mind in operation and restore its functions."

Dr. Eyman is now working on the preparation of a series of films that will be calculated to gradually break into a closed mind and set into activity the deadened brain cells. When the scenarios are completed the pictures will be taken in and about Massillon. Some few will be taken about the hospital grounds. Dr. Eyman's experiments are being followed with interest by alienists all over the country.

The growing appreciation of the motion picture on the part of the newspapers throughout the country is indeed noticeable in the changing attitude of the large city papers.

The same thing is happening, however, in the smaller towns as is illustrated by the following article which recently appeared in the Fredericksburg, Md., *Courier*:

"It is stated on good authority that over sixty million persons in the United States and Canada attend photoplays and motion pictures every week. How many others in dif-

ferent parts of the world also obtain entertainment and instructions from this universal medium is difficult to say. The photoplay appeals to as many persons as do the newspapers. The very nature of the appeal is swiftly developing a new world of literature, namely a narrative which reaches the mind and heart through the eye.

"The principles of sound and dramatic photoplay construction and production are different from those of any other universal form of reflecting expressions. The appeal is to the eye and we all know that sight is the most sensitive of all the senses, as well as the quickest to grasp and understand.

"Vast fortunes are being spent every year in maintaining studios for the making of photodramatic productions. There is a grave responsibility resting on the producers in sending forth to millions of persons a product which is likely to have a deep influence on them. That the motion picture industry most needs protection from its own people is the conclusion that many of the best authorities on the subject have reached. The acuteness of the case of censorship that prevails in many communities at this time is due to the lack of forethought on the part of a certain class of producers themselves more than it is to the reformers who have done much of the agitating. The gentlemen on whom the responsibility of the productions fell, have been so anxious to get all the money they could get at once that the censorship agitation is a natural and direct result.

"It has been well demonstrated by the Paramount Pictures Corporation that the better class of people do want clean pictures. This distributing concern, which has just passed its first year of existence, has become the greatest power in the motion picture industry through its policy of never deviating from productions that are clean in every respect. It is the purpose of this corporation to make the influence of the photoplay an influence for good. The photoplay is filling its highest destiny when it aids in the shaping of lives and it is gratifying to know that a trade name such as Paramount Pictures is an assurance to the patron of the photoplay house that the production will be of the highest standard."

A baby carriage garage is the latest improvement for a Philadelphia show house, and is meeting with the hearty approval of many mothers.

People have asked "What effect do the movies have upon the churches?" Of course, this applies to States allowing Sunday performances. We cannot answer for them, but do know that many religious and sects are renting the motion picture theatre for a place of worship on Sunday. Societies, speakers and others realizing the power of attraction the movie theatre has, are also holding meetings in them, gaining an audience that no doubt expects to see some film production in addition to hearing a lecture.

Letters to the Editor

Dear Sir:—As one of your subscribers, I wish to commend the department of your magazine devoted to criticism of prints. This is a valuable department to the amateur, and this feature alone is well worth the subscription price.

There is a noticeable improvement in the general make-up of your magazine within the last two years or so, which places it in the front rank of photographic publications.

CHARLTON V. HOWE.

New York, N. Y., Nov. 26, 1915.

Editor of THE CAMERA,

Dear Sir:—There seems to be an impression in the mind of some people, due to a persistent rumor, which apparently has sprung from nowhere, that the Ica Company has either gone out of business, or is soon to go out of business. We have never heretofore taken notice of this rumor (except in one instance, where we had the pleasure of damping up one source of such misinformation). The latest rumor is to the effect that there is at this time a representative of Messrs. Ica in this country, who is about to wind up the affairs of the International Photo Sales Corporation.

As we consider this rumor very derogatory to our interests, and as it is possible many of your readers are under the impression that they will no longer be able to obtain our goods, we are asking you, not alone as a matter of courtesy, but as a matter of justice, to print in the columns of your valued magazine, this very emphatic denial of any adverse action in regard to this company.

Like most rumors, this particular rumor probably originated through circumstances misunderstood by those not in close touch or sympathy with the affairs of this company. As a matter of fact, the International Photo Sales Corporation has been placed in a better position to offer the products of Messrs. Ica and other importations to this country after the European War, than it ever was.

Last May, in anticipation of the urgent need for better facilities with which to meet the ever constant and growing demand for Ica cameras and accessories, we moved to larger and more commodious quarters at No. 11 East 40th Street. In addition, we increased our selling force, and it is only a very short time before further changes for the betterment of our business will take place.

To deny that our business has not suffered by the conditions now existing in Europe would be absurd. Every merchant who imports, or uses in his business goods imported from abroad, has suffered to a very material extent, and we offer no apology in this direction for circumstances over which we have no control. We claim, however, and we believe

our claim is a just one, that so far as the importation of photographic goods is concerned, we have been very successful, and have received more shipments than most of our competitors, and we have the further assurance from our factory that advantage will be taken of every possible channel through which goods can possibly reach us.

It may not be generally known to your readers that we are the importers of a famous English camera, made especially for us, which is sold under the name of the "Ipsco Reflex Camera." We also represent an American motion picture camera, the "Kinograph." With these various representations, you can readily see that the rumors of the discontinuance of our business activities about which we write you are entirely without foundation. We do not feel that the rumors were sent abroad by anyone with a vicious desire to hurt our standing in the trade, but we do believe that our failure to refute these remarks and to state that they are entirely baseless, and without any foundation in fact or truth, would result in a general misunderstanding of our real status.

Very truly yours,

INTERNATIONAL PHOTO SALES CORPORATION.

JOHN L. CURLEY, *Secretary*.

ILLUSTRATING EDUCATIONAL BOOKS AND JOURNALS

W. CLEMENT MOORE

Nearly a million teachers and over a hundred thousand school boards, with nearly a billion dollars annually at their disposal, represent a purchasing power worthy of the consideration of publishers throughout the United States—and there are many book and magazine publishers using their best efforts to please and supply this great demand.

Again, it is true that practically all of the literature supplied to schools, teachers and pupils must be illustrated in order to conform to modern educational ideas, which demand practical descriptions as well as the printed explanations or stories.

Photographs are favored in this work too, because the illustrations used in text books, nowadays, must be *true* to life. A few years ago, all of the reading books and many other text books were illustrated with engravings made from drawings, but now the photographic illustrations predominate everywhere.

The subjects covered include everything known to modern art, science and progress. Here, in fact, is a broad market for all of the prints which do not exactly fit in with the demands of other journals and publishers. I do not mean by this that all discarded and unworthy prints are to be submitted to educational publishers. Far from it—for they will demand your best work. But if you have five excellent photographs of certain mills or industrial plants for instance, and can only sell three to technical and commercial publications, it may be that the educational pub-

lisher will find just what he needs in the other two for use in illustrating a commercial geography, commercial history or the other text covering the industries. In like manner, the most beautiful scenes in nature, which you might use for direct sale or for enlargement, will probably find acceptance for use in books of poetry or art, or supplementary readers for the school.

The modern high school, with its vocational departments, has created an interest educationally in every known trade, occupation or profession. To illustrate this, the last issue of *The School News* has an illustration of a printing plant on the front cover; the cover of *School Education* has a beautiful purple and gold reproduction of a scene in Arabia; the *Normal Instructor* shows a little child with a large toy horse, and we might go on throughout the entire list and we would find that there would, indeed, be few of the illustrations confined to pictures of schools, teachers or school rooms—although these too are used largely. The whole thought for you to bear in mind, and which I have tried to make clear to you is, that in every good, clear photograph you take, there might be a good subject for some educational journal or school book, and if you will early form the habit of selecting some of your best prints from your regular work to be submitted to educational publishers, you will find it highly profitable.

Here is the way Janet M. Cummings, a live photographer of New York City, handled some of this work. Recently an educational exhibit was held in New York City; and the various cities, states and towns near sent specimens and exhibits of the vocational work done in their respective schools. Miss Cummings seized the opportunity and secured early permission to photograph the exhibits. When the prints were finished, a selection of six to eight of the best prints of each exhibit were made and mailed to the publishers, newspapers and educational journals located in the same State as the exhibit from which the prints were made. With each photograph was a very brief description of the picture. Here is the description which was attached to a print of one of Newark's exhibits:

"Work of the Newark School Children Exhibited in New York." Work of beaten brass. On the left is a chafing dish, in the centre an electrolier, and on the right an alcohol teapot. In the background may be seen two small candle sticks fashioned in the form of a rosebud. With each set of prints Miss Cummings enclosed a typewritten letter offering the publisher his choice of any of the prints at only \$2.00 each. Many of the larger newspapers and periodicals sent checks at once for the entire set, while the majority of the others kept one or more. The same plan might be followed with educational conventions, etc.

At the same time, the other broad market for these photographs should not be overlooked—that of the personal demands. You

must remember that every time you take a photograph for a publication or publisher, if you do not sell him exclusive rights, then there must always be some person or persons who would like to have a copy of that particular picture—and they are the people who should receive a letter from you offering a mounted photograph for a reasonable price. For instance, the above mentioned photographs of the Newark, N. J., exhibit would no doubt be purchased by many of the principals and teachers of the Newark schools for their own private use. Of course the prices in such cases would be much lower than the price made to publishers, because the use is different.

Among the leading educational journals that use photographic prints, may be mentioned:

Gregg Writer, 32 S. Wabash Ave., Chicago, Ill. A monthly devoted to shorthand, type-writing and commercial education. Portraits, speed tests, etc.

World's Chronicle, Chicago, Ill. A weekly. News illustrations and industrial photos.

The American Botanist, Joliet, Ill. Published by Willard N. Clute & Co., is devoted to economic botany. It uses photos. It has various departments. Intending contributors should communicate with the editor. Flowers, scenes and trees.

School Century, Oak Park, Ill. Published monthly except July and August. All kinds of educational illustrations.

School News and Practical Educator, Taylorville, Ill. Published monthly except August. Buys Illinois prints suitable for use in school journal.

Atlantic Educational Journal, 19 W. Saratoga St., Baltimore, Md. Published monthly except July and August. Uses moderate amount of practical material that will be helpful to teachers in class rooms. Does not want abstract illustrations.

The Popular Educator, Boston, Mass. A monthly, uses a great many practical illustrations, especially those which concern modern methods of teaching modern subjects. It also accepts photos of plays, pantomimes, and words suitable for children to recite.

The School Arts Book, 120 Boylston St., Boston, Mass., is a magazine for supervisors of drawing and manual training and for grade teachers. It aims to acquaint instructors with fine examples of rendering in the varied arts of which it treats, and to show them how to correlate their work with other subjects in the curriculum. Many photos are used in each issue.

School Education, 717 Hennepin Ave., Minneapolis, Minn. Published monthly except July and August. Uses prints for its Primary Department, also for "Moral Hygiene in Schools," in which it uses brief articles in the line of teaching, practical photographs, etc.

Normal Instructor, Dansville, N. Y. A monthly, devoted to the interest of American

school teachers, uses many illustrations with brief articles, very short stories, verses; and for the department, "Music and Entertainment," brief plays, songs with music, verses and programs for special days.

American School Board Journal, Milwaukee, Wis. A monthly. Desires photographs showing school organizations and administrations, school architecture and sanitation and allied topics.

EDUCATIONAL BOOK PUBLISHERS

For reference, we are pleased to give the following list of educational book publishers: American Book Co., 100 Washington Square, New York, N. Y.

Allyn & Beacon, Boston, Mass.
Beckley-Cardy Co., Chicago, Ill.
Milton Bradley Co., Springfield, Mass.
D. C. Heath & Co., Boston, Mass.
Manual Arts Press, Peoria, Ill.
New England Publishing Co., Boston, Mass.
Rand, McNally & Co., Chicago, Ill.
Silver, Burdett & Co., Boston, Mass.

BUYERS OF PHOTOGRAPHS

BUSINESS PAPERS

Worth While, Washington, D. C. A weekly magazine that publishes photographs of successful people and the result of their success. Payment not large.

Factory, Chicago, Ill. Desires photographs of successful managers, factory office systems, factory equipment, also machines, engines, parts, new patents, improvements, etc. Photographs showing methods of handling men, pay-rolls, organizations, meetings of employees, etc., are in demand. Prices exceptionally good, ranging from \$1.00 to \$10.00 for each accepted print.

Inland Storekeeper, Chicago, Ill. If you can get "in right" with this publication you will be sure to receive good money for your work. The journal circulates monthly to the smaller retail merchants, and accordingly is eager for everything in the way of photographs of small store fronts, counter displays, show-windows, inside store arrangements, sales plans that have paid, etc.

Retail Equipment, Scranton, Pa., is another journal similar to this, and prints returned from one may be sent to the other.

System, Chicago, Ill. Perhaps the largest magazine published devoted to business methods, systems and business efficiency. A fine market for personal sketches, and photographs of highly successful business men, factories, departments, appliances, arrangements, charts, diagrams, organizations, buildings, etc., are always in demand if descriptions are clear, concise and interesting.

Baltimore and Ohio Employees' Magazine, Baltimore, Md. Publishes a number of photographs pertaining to railroading, illustrating, office methods, tracks, repairs, engineering work, etc.

Bank Life, Boston, Mass. Uses photographs of bank systems, new bank buildings, suc-

cessful bankers, etc. Payment not large but very prompt.

Business, Detroit, Mich. A good market for prints of successful men and women, factory methods and equipment, office systems and business equipment. Rates fair.

American Exporter, New York. Here is a market for photographs of harbors, shipping interests, wharves, vessels, packing and shipping methods and systematic business methods which should dominate all of this kind of work.

Town Development, New York City. A magazine that stands for the new idea of efficiency in the management of towns and cities, landscape gardening, public improvement methods, plans, and leaders of different Boards of Trade, etc. A wide opportunity and good prices paid.

PHOTOGRAPHS WITHOUT PLATES, FILMS OR NEGATIVES

Formerly in photography the transparency of the negative was a *sine qua non*; but now that is no longer indispensable and non-transparent, negatives will give just as satisfactory results.

When a photograph is made on an opaque support, which, of course, must be covered with a very sensitive emulsion, a negative is obtained without transparency. It might be said that transparency does exist to a certain degree, since the support can be seen even through those parts covered by the negative. If to make a photograph, the luminous rays are made to pass through a portion of a negative permeable to the light, and if these rays are arrested by means of a strongly lighted surface, or if a white wall is photographed through an obstacle, the result is practically the same.

This new method has a great advantage over glass plates on account of their fragility; to avoid this defect recourse has already been had to films. But these cannot be used in all cases, and they are much more expensive. Efforts have also been made to prevent halation by adding to the emulsion all kinds of substances capable of acting on the luminous rays before they reach the plate itself. Total absence of halo is secured by this method.

I replace the transparent emulsion support by an opaque one of paper, cloth or similar material, the back of which is blackened to stop the actinic rays. Moreover, these sheets can be super-imposed (up to 100 sheets) in a holder without any other intermediary, so that nothing but the photographic material is employed. With the new method there is not only complete absence of halation, but the sheets may also be rendered orthochromatic. Thus the luminous rays, which, received by the lens, pass through the emulsion, and its support is colored yellow, they also become yellow and are reflected as such by the white screen of baryta of the emulsion and act with the others. The result of this is that the emul-

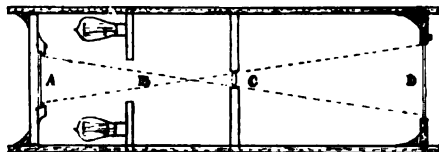
sion is lighted on both sides, and requires less exposure than a glass plate of the same sensitiveness, with which it is necessary to avoid reflection.

In developing these opaque negatives on paper the intensity cannot be judged or the progress of development watched by transmitted light, but only by examining the surface, as in making positive prints on developing paper. It is incontestable that many errors in development can be avoided in this way.

It is self-evident that the washing, drying and preservation of the negatives will be much more simple than with plates or films.

I make the negative on developing paper with the aid of a very practical patented apparatus, and obtain in this way a positive print. This print can be enlarged or reduced to any dimensions, and as artificial light is used, one is not dependent on daylight.

Following is the mode of procedure for obtaining positives: A frame furnished with clamps is adapted to a printing apparatus (see figure) in which the negative is placed on a support *A*, where it is kept in place by a simple appliance. Electric lamps fixed to the support *B* illuminate the negative fully and uniformly. The luminous rays reflected by the negative pass through the lens in *C* and are arrested by the positive paper in a holder at *D*. In this way the opaque negative is photographed directly on the paper, which, after developing, fixing and washing, gives the positive.



With the above apparatus the focusing is very simple and the operator can control the printing according to his taste or will. The negative should not be placed in a holder like a glass negative, but is placed in the position desired for the production of the positive. This facilitates the work of photographing. The portion of the negative that it is desired to reproduce, is focused by transparency on a ground-glass, or, what is simpler, a piece of thin tissue paper placed in the slide *D*. The operator and the positive paper must be in darkness. In this way a 5x7 bust portrait can easily be made from a 5x7 full length negative. The positive will be as free from grain and as fine as if reproduced from a negative of the same size. The operation is greatly simplified by the facility with which the slides supporting the negative and the positive paper can be moved backwards and forwards.

An electric clock can be arranged in connection with the lamps, by which these can be extinguished automatically at a given moment by setting an indicator on the clock for the time of exposure required. The positive

paper is placed in its holder, where it is kept flat by clamps. After exposure the paper is developed and fixed in the usual way.

The paper used in this process should not be considered as a print, but as a direct photograph. It gives all the fineness of detail of the original in the reproduction. Developing paper entirely supersedes printing-out paper. The apparatus may also be utilized for printing, enlarging or reducing transparent negatives.—*Frils Larajolli in Bull. Belg. de Photographie.*

INTENSIFICATION BEFORE FIXATION

Not only may the method, somewhat unusual of intensifying before fixing the plate after development be of advantage directly where during the progress of development one anticipates an incipient indication of fog, but it may also be advantageously employed to secure particular effects in the evolved developed image.

Where one perceives that any continuation of the development may only result in injury by the overcasting of the image, it is unwise to further continue the operation. The benefits of ante-intensification may be taken advantage of, and the best results accrue.

In the first place to remove any possible trace of fog which may have been produced by the development, immerse the well washed, unfixed plate in a bath consisting of

Ferric Chloride.....	10 grains
Citric Acid.....	20 grains
Water.....	16 ounces

Do not let the plate remain over a minute in this solution. Remove and wash under the tap for five minutes and then place in the following bath for the intensifying:

Bichloride of Mercury.....	10 grains
Ammonium Chloride.....	10 grains
Citric Acid.....	10 grains
Water.....	12 ounces

Dissolve the ammonium chloride first in the water, because the bichloride which is tardy of solution in water is more readily soluble in a solution of a chloride. The plate should remain in this solution until the image bleaches, rocking the tray to insure uniformity of deposit. Remove then, and place for five minutes in a solution of common salt and water, and then wash well under the tap for twenty minutes or so. Thorough elimination of the unappropriated chloride of mercury is essential to avoid subsequent stain. After washing, redevelop the plate in any ordinary developer (old developer), to which some sodium sulphite has been added. Wash again and remove to the hyposulphite and fix for half an hour. The image is then restored and all that is needed is the usual washing given to fixed plates. The great advantage of this ante-intensification is in the securing of a much finer deposit upon the film than is had with after intensification, and besides the tone of the image is of a rich brown or sepia.



In New York the other day, we had the pleasure of examining the new Acme Enlarging and Projecting Lantern. There are so many different ideas incorporated in this new lantern, that we advise our readers to send for descriptive matter to the Acme Enlarging Lantern Co., 81 Nassau Street, New York City.

The Fifteenth Annual Exhibition of the Wilkes-Barre Camera Club, Wilkes-Barre, Pa., will be held February 22 to 29, 1916. Last day to receive prints, February 5th. For further particulars, address Exhibition Committee, Wilkes-Barre Camera Club, Poli Building, Wilkes-Barre, Pa.

Our friend C. H. Claudy, besides writing stories for THE CAMERA has written a series of books that are invaluable to parents who have the usual "question box" problems with their youngsters. The latest book, *Tell-Me-Why Stories About Color and Sound*, published by Robert M. McBride & Co., Union Square, New York, is written in that easy and explanatory way that a six-year-old youngster can grasp its meaning at once, and it gives him ideas that will be of help to him through life. Some of the grown-ups can profit by it as well. Two other books in the Tell-Me-Why series—*About Mother Nature* and *About Animals*, will give parents ideas just as well as it did for Old Pops and Carlie-Boy. The books are sold at \$1.25 each.

Another book by Mr. Claudy, with Robert M. McBride & Co., Union Square, New York, is entitled *Partners of the Forest Trail*, originally the story was published in *The Youth's Companion*, and tells of the life in the wild woodlands. It is written in a vein that carries the reader from the start to the finish, and with a desire that the book didn't end so soon. Price is \$1.00 net, bound in cloth.

Inventions and Patents—Philip E. Edelman. D. Van Nostrand Co., New York. Price, cloth \$1.50, net.

This is a work of particular value to all interested in patents and patent rights, and fills a long-felt want, as there are but few publications upon this subject outside the publications of the patent office, and these are generally couched in such technical phraseology as to leave the inexperienced in doubt just on those points which are of the most vital importance for comprehension.

Many an inventor has failed to benefit from the securing of a patent by reason of a constitutional diffidence to put before the public, an appliance which he feared might not be considered of importance or value, and thus frequently loses a great opportunity to derive profit therefrom. Or on the other hand, he may have a tendency to be presumptuous and rush for a patent which fails to be of any worth to the public or to himself.

The author of this book, bearing these points in mind, has written a very interesting work which fully covers the whole subject, and makes plain to the most inexperienced the opportunities offered, and shows the steps necessary to secure the full benefits.

The information is full, and items are treated which are not to be obtained outside the office of an attorney, and what is of special value to the reader, all the terms are explained in non-technical language.

Considering the nature of the topic, the book is remarkable for the pleasant literary style in which it is written, and the evidence of the thorough acquaintance by the author of the subject in all departments, is patent to the reader from the preface to the appendix.

An exposure meter, out of the ordinary, and—for a wonder—an accurate one, has just been placed on the market by G. L. Harvey, 105 South Dearborn Street, Chicago. We have tested this new Harvey Exposure Meter rigidly, and find that it is the simplest and the most accurate we have ever tried. We do not hesitate in giving it the endorsement of THE CAMERA. There are neither calculations nor guessings—only plain facts that can be grasped by everybody. The meter is sold for a dollar, and that is the only expense you will have—no paper matching, and the meter is going to be a winner the very first time you use it.

How to Choose and Use a Lens—Practical Photography Series No. 3. American Photographic Publishing Co., 221 Columbus Avenue, Boston, Mass. Cloth, 50 cents; Paper, 25 cents.

Perhaps no other department of photography occasions the amateur more perplexity in decision than the choice of the lens, and no other topic is the occasion of more correspondence indited to the magazine editors, and none requires more lengthy replies. The factors are so numerous that it is next to impossible to give comprehensive and adequate information in the pages of an ordinary letter to the inquirer. It is, therefore, that we appreciate the publication of this little work on the subject of the choice and use of the lens, not only as a labor saving to ourselves, a book to which we may with assurance of the correctness of the advice contained therein recommend to the study of our correspondents, but also as a valuable and trustworthy book of information on all matters relative to the lens in its application to photography.

In complying with the instructions contained in Article 8, page 80, of the July, 1915, Postal Guide, it is not sufficient when a parcel is presented for acceptance for insurance or collection on delivery merely to inquire whether it contains fragile or perishable matter or to accept the statement of the person presenting the parcel that it contains "Merchandise." Postal employees must ascertain in each instance what articles the parcel contains, and, if fragile or perishable matter is inclosed, shall cause the parcel and each coupon of the insurance tag to be properly marked. The question of whether a parcel shall be indorsed is to be determined by the postmaster or postal employee accepting the article and not left to the discretion of the sender.

We learn with regret, from the pages of the *British Journal of Photography*, of the death of Mr. Vero C. Drifffield on November 14th. Mr. Drifffield was born in 1848, and early in life began the practice of photography in the studios of Mr. Sampson, a well-known professional photographer of Southport, England. He was also associated with various chemical and engineering interests, and his attainments as a chemist secured his appointment with an extensive manufactory of alkali. It was here that he made his acquaintance with Dr. Hurter, a man of kindred tastes and wide experience. In 1876, Dr. Hurter and himself began their collaborative work in photography in the investigation of the scientific phase. The last contribution to photography in which their joint results were made known, appeared in the *Photographic Journal* in 1898, the year in which Dr. Hurter died. This was their famous paper in relation to sensitometry, which raised so much discussion, and which was provocative of much valuable discussion in photographic papers, which though not accepted in all particulars, undoubtedly contributed much to the great improvement subsequently effected in the manufacturing of dry plates.

The American Annual of Photography for 1916.

George Murphy, Inc., 57 E. 9th St., New York City. Paper, 75 Cents; Cloth, \$1.25

Though dependent almost entirely for contributions to this ever interesting annual publication to American workers in photography, the editor, Mr. Percy Y. Howe, has presented this year quite as interesting a publication as in former years. Of course, we regret the added interest which would have accrued from the European contributions, but we are compensated by the many excellent and valuable papers on a variety of topics which the editor has been enabled to secure from our own country, which palpably demonstrates that America is alive to all subjects of photography in its various lines. The contents are varied and appeal to every variety of worker. The practical man as well as the artistic will find in the 300 pages of this Annual much of interest and of value to him.

"Making the Movies"—Ernest A. Dench—
The Macmillan Company, New York.
Cloth-Bound, \$1.25.

Most of us are like the little one in that interesting book, "Helen's Babies," we want to "see the wheels go round" in the watch, and when we sit in the movie theatre and behold the marvels of the cinematograph, we are anxious to learn something of the way in which all these manifestations of actual life are so perfectly presented. Few of us, however, realize the skill, energy, tact and intelligence, coupled with judgment and taste, and the appreciation of the exacting demands of the now critical spectator, which the author of the play must keep constantly in consideration, in the framing of the constantly changing picture. To satisfy this all too natural desire of the public, Mr. Ernest Dench, who is intimately acquainted with all the various devices by which this reality is presented, has most entertainingly introduced us to a view behind the scenes. His book is most pleasingly written, and we are introduced, as it were, to the very actors themselves. All the different steps are fully explained from the first rehearsal of the photoplay to the actual filming. Besides, the book is made still more interesting by the discussion of topics pertinent to moving pictures, thus making it of interest, not only to the general reader, but of special value to all who have felt the need of some instruction as to the best methods of working stories suitable for movie projection.

The Making of Photographic Objectives.—Dr. H. C. Lord of the Observatory of the Ohio State University, sends us a brochure on the making of lenses for photography. The literature on the subject of photo-lens-making is by no means extensive, and what there is on this subject is overloaded with so much technical and mathematical matter as to be of little or any use to the ordinary individual interested. This pamphlet by Dr. Lord meets admirably the want of the worker who has some mechanical ability at construction, but who has not the mathematical education to follow the abstruse formulæ. The various operations from the block of glass to the final centering and polishing are explained in simple comprehensible terms, and by the use of such ordinary appliances and tools to be found in any machine shop, the writer demonstrates that one may make a very creditable piece of lens work. The pamphlet is also of value for the stock of information it affords on matters relative to lenses and their making, and would certainly incite anyone of mechanical ability interested in lens making, to try his hand at the operation.

The Art of the Moving Picture—Vachel Lindsay. The Macmillan Co., New York. cloth; 290 pages, \$1.25 net.

The book is written by an ardent enthusiast for the photoplay, and he sets forth in a series of animated chapters the power of the moving picture drama in administering to the par-

ticular demands and tastes of the modern world for action above sentiment or deep emotional feeling, and consequently lays stress on the essential difference between the photoplay and old legitimate theatrical performances, showing that the success of the moving picture drama is only on the line which excites mental feeling through external representation directly by action rather than indirectly by association. The scene is the whole thing in the photoplay. Nice stage settings and elaborate effects are in the drama subordinate and supplementary. The author's points are well taken, and sustained throughout, and are of pertinent interest and value to any who may desire to write scenarios which shall take with the public.

The various phases of the photoplay are treated so that we are presented with an excellent comprehensive and analytical view of the particular features of any special variety of this new and marvelous art of entertainment.

VEXED QUESTIONS

Can as brilliant negatives be obtained with a small stop as with a large one, provided that, in each case, the exposure given is correct?

The question which we have written at the head of this note is one upon which we have heard diametrically opposite opinions expressed. Some photographers hold that, provided the exposure is proportionally increased, or perhaps increased a little more than in strict proportion, stopping-down has no effect upon the character of the negative, except, of course, so far as any improvement in definition is concerned. Others as dogmatically assert that, in order to get the best results, it is important to use the largest stop which will give us the definition required.

As is usual when practical workers hold opposite opinions on a subject with which they are familiar, there is a good deal to be said on both sides.

The advice given is that the amateur should always use the largest stop which will give him that degree of good definition which he requires; and there are several reasons for this.

One is that some workers habitually stop down to a perfectly unnecessary extent, only to save trouble in focusing, or perhaps, because they have not very much faith in their focusing when they have done it. This is clearly not the way to become a competent photographer.

If the focusing is done with a large stop, and then the lens is very much stopped down, it is possible that, instead of the image being sharper than before, it is made less sharp. With many lenses the only way to get the best definition is to focus with the aperture which is to be used for taking the photograph.

Then again, there is the vexed question whether a negative is at its best when every-

thing in it is defined equally crisply; but into this we will not go now. We will assume for the moment that the photographer likes to see his prints with as good definition in every part as the lens which he is using is capable of giving.

There is another reason for not using too small a stop, and that is that with a great many lenses, and certainly with some of the most elaborate and otherwise perfectly corrected patterns, stopping-down does have a tendency to reduce the brightness of the negatives, for a reason which can be explained in very few words.

Stopping down the lens increases the length of time during which light has to be admitted to the camera. Thus, with f32 we have to give sixteen times as long an exposure as with f8. During any exposure through a lens the plate is not only exposed to the light which is projecting a definite image, to secure which the exposure is being made, but it is also exposed to light which the lens is scattering owing to its various reflecting surfaces, owing also to any imperfections in its polish, and also owing to reflections from the blackened surfaces of its mount and stop. However perfectly the blackening of these may be done, some light must be reflected by them.

Now, it does not follow that because a change of stop from f8 to f32 reduces the image-forming light on the plate to one-sixteenth of its former quantity, it reduces the scattered light to the same extent. As far as some of it is concerned it may do so; but for the rest it may reduce it only partially, or not at all, or may even increase it. The introduction of a small stop exposing an area of not very dead black metal turned towards the back half of the lens may actually reflect back upon the plate more of the light which the back lens reflects on to the stop than would be the case if the stop were larger, or were removed altogether.

The result may be that, while the image-forming light is reduced to one-sixteenth of what it was, the scattered light on the whole may be much less reduced. So that, as the exposure is increased sixteen times or more, to compensate for the stopping down, the proportion between scattered fog and the image-forming fog is altered; and one thing is quite clear, namely, that any alteration on the whole must be to increase the proportion of the scattered light, and so to decrease the brilliance of the negatives.

This is not mere theory; or rather, it is a theoretical explanation of a fact which many have observed in practice. It is all the more important to the amateur photographer, since the conditions under which he often works—the lens covering a much larger field than he is using, often provided with a very small hood or none at all, with a camera reduced in size as much as is possible, and so with bellows reflecting scattered light upon the plate or film which lies close to them—are unfavorable.

—*Photography and Focus.*

THE GIRL AND THE CAMERA

Many parents of daughters who have a craze (as the former express it), for taking pictures, complain bitterly about the expense attached to the "camera cult." True, you may have grown weary in the support of your daughter's camera, but has it never occurred to you that the camera may be made to support your daughter? Photography is a very profitable profession. If your daughter has a natural taste for it, you should do all in your power to develop her talent, not to discourage it. It won't take you long to find out whether it's just a passing fancy or—the real thing.

There are, at the very least, half a dozen of the world's famous photographers who are women. All over the country there are hundreds of women who have achieved a lesser though very profitable degree of success. The only wonder is that more women have not gone into the profession, which, authorities say, calls for a particularly feminine type of ability.

Surely it's not difficult to figure out why women should make successful photographers?

One of the world-famous women photographers—one who has perhaps photographed more celebrities than any other woman in the world—explained it in this wise:

"Women make good photographers because of their great attention to details. In making a satisfactory portrait photograph, as much depends on the little things—the details of the dress, the arrangement of the hair, the expression of the face—as does on the general lines of the nose; and the average woman is naturally much more alert to these details than the average man would be.

"Sometimes," said this woman photographer, "women come to me—as you may be sure they wouldn't think of going to a man photographer—with a trunk full of gowns and ask me to tell them how to dress for a sitting. 'Make me beautiful,' they say to me, and because I am a woman I can tell them how to dress their hair, how to wear their clothes, how to hold themselves to the very best advantage. With children, too, a woman photographer can do more than a man, because, it is said, it is woman's natural duty to dress and care for children."

There are three good ways in which a girl may be fitted for profitable photography, any one of which, if followed with enthusiasm and perseverance, should lead to success.

Probably the most thorough of these three ways—and at the same time the least expensive—is the practical method of going to work in a photographer's studio and learning the business from the bottom up. Such was the beginning of the famous Madame Alice Blache, head and front of the Solax Moving Picture Company with a personal income, at present writing, of fifty thousand

dollars a year. Such an opening as we refer to cannot, of course, be obtained by watching the newspapers for an advertisement for an ambitious young woman who wants to learn photography, nor by waiting for some photographer to come and invite you to come and take a place in his studio. Go straight to the best photographer you know—or have some person of influence go for you—and ask him to consider you as an applicant for the next opening for beginners that occurs in his staff of employees.

In a position of this sort, you should be content to work for very small wages. Sixteen or twenty dollars a month for the first few months or even less is probably all that you will be worth. You should be willing to do anything practically there is to do in the studio—meeting customers, keeping track of engagements for sittings, helping with the posings, and even running errands, if need be. But, while you should consent to perform these tasks willingly, you should insist in the course of your training upon being given a chance at the more technical side of the work. For, unless you get your hands into the chemicals used in developing and printing and have actual practice in retouching and mounting photographs, you will not secure the all-round training necessary for the making of a full-fledged photographer.

One woman who, a decade ago made a name for herself in portrait photographs of celebrated men and women, was entirely self-taught. A glazed chicken house served for her studio and an adjoining coal house was her dark room. Nowadays, the methods of photography have been so greatly simplified that almost any room provided with running water would serve for the home photographer's workroom. There are several good books you can use in initiating yourself into the early stages of photography. If you are really convinced that you want above all things to learn photography, fifty or a hundred dollars spent on materials and equipment should not be too great an investment for this home laboratory.

The third way to study photography—and probably the pleasantest—is in school. In several of the schools of industrial art such as are found in the large cities, courses in photography are given. Several of the women's colleges offer short practical courses in photography; and the summer schools connected with many of the large universities also offer excellent facilities for the study and practice of photography. A typical course of this sort given in one of the large technical schools includes one hundred sessions of two hours each. The cost of the course is about fifty dollars, and includes instruction in the use of the camera indoors and in the studio, manipulation and manufacture of negatives and printing papers, mounting and framing, and lantern slide making, as well as the artistic principles involved in photography.

Grounded in any of these three ways, there are many possible openings for the woman photographer. If she has had a practical training in a city studio, she may prefer to remain in the employ of a photographer with a steady salary of twenty to fifty dollars a week, or, if in addition to good business ability she had some available capital, she might follow in the footsteps of the dozen or so prominent women photographers whose names now stand out as independent photographers owning and running their own establishments. Among these occurs to us the name of Florence Hendershot, who conducts a very successful studio in Chicago and enjoys a most exclusive clientele among the best class of people in the city.

With very small capital, a young woman might start out in a small town or at a summer resort. One young woman, whose only training had been gained through her own efforts at home, opened a small studio in the loft of an unused stable—quarters for which she had to pay only five dollars a month. She put up attractive signs and sent circulars to a mailing list of five hundred of the most prominent people in the town—a town of about twenty-five thousand population. It was the novelty of having a young woman take photographs and the quaintness of the loft studio, as well as the real ability the young woman possessed, that brought immediate success to the new venture. After the first two or three months, this young woman had a fairly well paying business and now she is sure of a net income of over a thousand dollars a year—which compares very favorably with the earnings of other young women in the same town.

Photographing the exteriors and interiors of houses became the vocation of one woman photographer. She began in a newly opened suburb of New York City, where practically every one was glad to have a set of half a dozen views of her house. Now, with the aid of a solicitor who goes the rounds of the various suburban regions of New York City in advance of the photographer, she is kept busy taking pictures of suburban houses. Photographing pets—horses, cats, dogs and even birds—for their owners, keeps another young woman busy. In one favorite society summer resort, an able woman photographer nets a good income from artistic dinner cards, post cards, dance orders, and souvenir booklets decorated with photographs of local interest.

One young school teacher who began photographing as a holiday pastime, makes five or six hundred dollars after hours and in vacations giving lessons in photography. Many of her pupils she gets through the recommendation of dealers in photographic supplies, who, when they sell a new camera, are quite willing to give their customer a card stating that Miss Jones gives instructions in the use of the camera at a dollar a lesson.

—*Business Woman's Magazine.*

THE ENLARGING LANTERN

"PRACTICUS"

By "enlarging lantern," I mean any enlarging apparatus in which the light is directed upon the negative, and afterwards converged upon the projection lens by means of a condenser. Therefore, what I have to say does not apply to the other patterns of enlarging apparatus, sometimes termed "enlarging lanterns," in which the negative is illuminated by a large volume of well-diffused or scattered light obtained by reflection from some dead-white surface or by interposing a diffusing screen between the direct source of light and the negative, as is done in using the mercury-vapour light for enlarging, as also in some of the illuminating boxes where the direct rays from the source of light are employed in conjunction with those reflected from the white walls of the box. The condenser system of illuminating a negative is different in principle from the foregoing, and calls for the observation of a number of separate points for its successful use.

Broadly speaking, the proper way to use an enlarging lantern is first to adjust the enlarged negative image upon the easel as regards size and approximate sharpness, and then to take the negative out of the stage and adjust the light so that the easel shows a clear, bright disc perfectly free from patches of shadow. In doing this the light requires to be adjusted up or down, to one side or the other, and also as regards its distance from the condenser. In making these adjustments, perhaps the readiest plan is to place the light centrally first of all, so as to show a shadow uniformly all round the disc. Then, on pushing the lamp forwards or backwards, this marginal shadow will disappear, leaving a clear, bright disc. Then the negative is put back again in the stage, the final focusing done, the orange cap put on the lens, and the bromide paper pinned up for exposure.

The position of the light having been adjusted in this way, the lamp can remain where it is so long as the degree of enlargement remains approximately the same. A little difference one way or the other will not disturb the even illumination of the disc. Such disturbance is most marked when using a light of very small area, such as an arc or limelight. While such a light as this undoubtedly gives the crispest definition in the enlargement and yields the finest results from a thin but brilliant negative, yet it calls for more careful adjustment of the position of the light for every different degree of enlargement. Sources of light which are bigger in area, such as an incandescent gas mantle, permit much greater latitude in this respect; there is not anything like the same need to worry about the exact adjustment of the light even when the scale of enlargement is altered to a very considerable degree. The user of an enlarging lantern who will take the trouble to spend half-an-hour in seeing for himself just what alteration he can make in the scale of

enlargement without impairing the even illumination of the easel through keeping the lamp in the one position, will save himself a good deal of trouble in the regular use of the lantern. He should, of course, make his observations with the stage empty—that is, with the negative removed.

For several distinct purposes a sheet of ground glass is interposed into the enlarging system. Most enlarging lanterns provide grooves for the ground-glass in the front of the lamp body—that is to say, some inches to the rear of the condenser, and as a rule about midway between the condenser and the light. This is the best position for the ground glass, or rather the best place for it is as near to the light as it can be placed without danger of its cracking.

The ground-glass is often useful in simply cutting down the power of the light, which, without it, may be so great as to make the exposures on rapid bromide paper inconveniently short.

With an illuminant such as incandescent gas or a Nernst lamp—perhaps the two sources of light which are most generally used by amateur workers—the ground-glass greatly facilitates getting even illumination on the easel, whilst a third use of it is in enlarging negatives which carry any material amount of retouching with pencil or other working-up on the glass or film side. With an unscreened light this handwork is often very unpleasantly accentuated in the enlargement, and if a condenser system of illumination is employed, the use of a diffusing screen is an absolute necessity. Even then the retouching will often show to an unsightly extent, though the effect can be mitigated somewhat by putting the enlargement very slightly out of focus. The best results, however, from such retouched negatives (as also from carbon transparencies) are obtained by a thoroughly diffused source of illumination, such as daylight, or artificial light obtained entirely by reflection, or by putting ground glass between negative and condenser, which has the effect of a diffused light system.

There is another adjustment occasionally provided on enlarging lanterns which is occasionally of service. Usually when enlarging from the whole of a negative of the size which the enlarging lantern is made to take—e.g., a half-plate negative with an 8-inch condenser—the negative requires to be as close against the condenser as it will go, otherwise the corners will not be properly illuminated, and will give rise to dark patches on the corners of the enlargement. But when the enlarging lantern is used for a much smaller negative, or for a small part only of a negative, it is an advantage to be able to move the negative stage forward so that the negative falls in a narrower part of the cone of light proceeding from condenser to projection lens. The adjustment permits a much stronger illumination, the value of which is obvious when it is remembered that very frequently enlarge-

ment, in these circumstances, is upon a much greater scale.

As regards the various movements of the negative itself, which makers within the past few years have provided in generous abundance, the beginner may easily misuse them. Take first the rise and fall of the negative in its stage. If you are working from the whole negative, and if the latter is of the size for which the lantern is made, it will be found there is practically no margin for movement. You must have the negative central, or it will not be properly illuminated. Some beginners seem to think that this movement is for the purpose of allowing them to adjust the enlarged image nicely upon the bromide paper after they have pinned the latter on the easel, but to use it in this way will lead to the defect I have just mentioned. The real purpose of the rise and fall movement is to allow a portion of a larger negative to be brought more towards the centre of the condenser. Thus, if a head is being enlarged upon a considerable scale from a group negative, it is convenient to adjust the negative so that the head is about central in the stage, and therefore occupies a central position on the easel. Unfortunately, the range of movements afforded in most enlarging lanterns is quite inadequate for this object to be secured; the lack of it will often compel the enlarger to get his image central on the focusing-screen by making use of a movement which in theory is wrong—namely, rise or fall of the projection lens on its front. If you happen to be making a big enlargement from a small portion of a negative which lies near the edge of the plate, you are usually forced to raise or lower the lens unless you happen to have an easel of exceptional size.

As regards the rotating movement of the negative in the stage, it is certainly convenient and unobjectionable. If the subject happen to be not quite "square" upon the plate, or the paper should have been pinned askew on the easel, a touch of the pinion which operates this rotating movement puts matters right without disturbing anything else.

The third movement found in most enlargers is one which I fancy is very rarely used—namely, a tilting adjustment, by which the negative can be angled across the axis of the lens. The purpose of this movement is to allow of any distortion in the negative, due to the camera having been tilted at the time of exposure, to be corrected in the enlargement. The movement is not sufficient in itself, but requires to be supplemented by an equal and opposite amount of tilt from the easel. Moreover, the lens requires to be stopped down considerably in order to give definition over all parts of the negative; and when one does that, it very often happens that illumination troubles, due to the smaller aperture in the lens, crop up to an extent which makes it impossible to make a perfect enlargement. As a matter of fact, it will usually be found that the practical way of

dealing with a negative of this kind is first to prepare to a duplicate by copying in the camera, and there making the correction of the distortion.

Lastly may be mentioned the advantage in all use of an enlarging lantern of a projection lens of large working aperture. Difficulties in illumination which arise in using an $f8$ lens will disappear when one of $f6$, or better $f4$, is employed. Of course, it is the absolute, not the relative, diameter of the aperture which is the crux of the matter, but I am assuming that the user is generally employing on the enlarging lantern a lens roughly equal in focal length to the diameter of the condenser. If choice has to be made between several lenses of the same f number, but of different focal lengths, then, other things being equal, the lens which is an inch or two longer in focus will be better for the purpose, since the actual diameter of its full aperture will be greater. Thus it will be found that an $f8$ lens of 9 inches focal length will be better for enlarging from half-plate negatives than an $f6$ objective of 6 inches focus, even though the latter may cover the half-plate satisfactorily. A portrait lens with its large aperture is, unfortunately, not suited for the enlargement of all kinds of negatives owing to its small covering power, although it is an excellent lens for portrait negatives where a little falling off in the definition towards the margins of the enlargement is no drawback, but very often an advantage. A short-focus portrait lens, such as a Dallmeyer Stereo, is excellent for the purpose of enlarging from very small negatives, such as the $6 \times 4 \frac{1}{4}$ cm. size, used in vest-pocket cameras. It has just sufficient covering power for these small sizes, while its great rapidity allows short exposure even with big scales of enlargement. *The British Journal of Photography*

TELE-PHOTOGRAPHY WITH INFRA-RED RAYS

The infra-red rays play an important role in the relations between the sun and the earth, and in the illumination of all terrestrial objects by sunlight, says *Photographische Industrie*. We know that the rays of light in every gas, and in the air, are refracted, and that this refraction is the greater the shorter the wave-length of the rays in question. Consequently the ultra-violet, violet and blue rays are refracted most strongly, green and yellow less so, and red and infra-red least of all. Thus the sky appears blue to us in the daytime, since we cannot see the rays of ultra-violet that are dispersed in the atmosphere. Violet, blue and green-blue, on the other hand, are to our eyes added to the color of the sky.

Naturally, sunlight that has passed through thick layers of air is lacking in the dispersed blue and violet light, and we are conscious of such light as yellow or orange or red, according to the thickness of the layer of air through

which it passes. Upon this circumstance depends the well-known twilight appearances—the redness of the sky in the morning and evening. Almost more interesting is the rarely visible "after-twilight." Long after sunset, somewhat high above the western horizon, a deep-red light appears. In this case the sun's rays, refracted by the atmosphere from their rectilinear course, are forced to follow a path that almost encircles the earth and passes through such a wide stretch of air that it not only loses the ultra-violet as far as the orange, but also the larger part of the red light. It consists of only a little red and a great deal of infra-red. If such light encounters particles of dust or clouds at a great height, and it is deflected downwards, then the rare "after-twilight" appears. We would not be conscious of the appearance were it not already completely dark, and we have here the rare case in which the infra-red rays still excite the vision.

The property of the infra-red rays of being but little scattered and weakened in passing through the atmosphere gave rise to the idea that they might also be used for telephotography. We all know how, in viewing objects a few miles distant, they appear to be shrouded in a bluish haze, and for more distant objects this becomes impenetrable. Every mountain landscape bathed in blue confirms this. But on the other hand, the strength of the photographic plate lies in the blue portion of the spectrum. It requires special means to render it sensitive to red, and it must be still more difficult to make it sufficiently receptive to the infra-red rays. If we can succeed in so sensitizing the plate, the problem of telephotography with the aid of infra-red light will be solved. Only a red filter is required, that will shut out all the short-wave rays and only let pass the infra-red, i.e., the rays from the extreme red end of the spectrum. If we can get a sufficiently sensitive plate, we can obtain perfectly clear photographs of subjects miles away, where our eyes can see only the blue mists.

Of the right kind of filters there are plenty. And now two American photographers, G. Michaud and J. F. Tristan, have to a certain degree succeeded in sensitizing the plates. They worked consecutively with cyanin, dicyanin, chlorophyl and alizarin blue S, and found that the last named coloring material in combination with silver nitrate works very satisfactorily, and makes the plates sensitive to rays that previously were beyond the reach of photography. It has been possible to take a sunny landscape, with $f8$ opening, in two minutes. To be sure, the photographer must color sensitize his own plates, as they retain their sensitiveness for only a few hours.

In this way telephotographs have been taken at a distance of from ten to twenty miles in the mountains of California, and these photographs show that if our eyes were sensitive to the infra-red rays, we would be able to

see clearly many charming distant views among the mountains.

For sensitizing the plates, the discoverers give the following recipe:

Alcohol, 50 per cent..... 200 ccm.
Ammonia..... 4 ccm.
Alizarin blue S..... 0.04 gram
Silver Nitrate, 10% solution 5 minims

All these chemicals are to be kept in separate bottles. In order to sensitize a plate the ammonia and the alizarin blue solution are first poured into the alcohol in one bottle, which is tightly corked, and then shaken for about five minutes in order to obtain a thorough solution of the coloring material. The liquid is then filtered into another bottle in which the five drops of silver nitrate has previously been put. The liquid is again briskly shaken and then poured over the plate in a tray. The tray is rocked for three minutes when the plate is removed and washed in running water for three minutes more; the back of the plate is then dried off with blotting paper and stood perpendicularly to dry. This is best done in a perfectly light-tight box, standing the plate on blotting paper. For the purpose of absorbing moisture, a tray containing calcium chloride is placed in the box. In this way the plate will dry in about an hour and may then be placed in the plate-holder. It should be observed that all this work must be done in absolute darkness, or with a very feeble green light. The ordinary red dark-room light would of course ruin the plate.

THE DAGUERREOTYPE

This, then, is she.

My mother as she looked at seventeen.

When she first met my father. Young incredibly.

Younger than spring, without the faintest trace Of disappointment, weariness, or tear

Upon the childlike earnestness and grace Of the waiting face.

Those close-wound ropes of pearl

(Or common beads made precious by their use)

Seem heavy for so slight a throat to wear;

But the low bodice leaves the shoulders bare

And half the glad swell of the breast, for news,

That now the woman stirs within the girl.

And yet,

Even so, the loops and globes

Of beaten gold

And jet

Hung, in a stately way of old,

From the ears' drooping lobes

On festivals and Lord's-days of the week,

Show all too matron-sober for the cheek—

Which, now I look again, is perfect child,

Or no—or no—'tis girlhood's very self,

Moulded by some deep, mischief-ridden elf

So meek, so maiden mild.

But startling the close gazer with the sense

Of passion forest-shy and forest-wild,

And delicate, delicious merriments.

—William Vaughan Moody.

COPYING DOCUMENTS

The other day the writer was asked to make a photographic copy of a page in a very ancient church baptismal register, yellowed with age, and the writing to be copied was very indistinct and faded. Experience showed it called for an ortho, or panchromatic plate, in conjunction with a suitable filter or screen. Either of these, at the time, the writer was not possessed of, and as the work was required at short notice the following plan was hit upon and a highly successful result obtained. An ordinary plate was used, and the exposure made by burning about two feet of magnesium ribbon. Daylight was excluded from the room after focusing, a primary experiment showing that the very white character of the light, afforded by the burning ribbon, eliminated nearly all yellowness from the faded page. This method should be noted as of very considerable value to those undertaking work of this description who are temporarily out of the most suitable ortho plate, and the method of lighting would, no doubt, give a far finer result, even when using orthochromatic or panchromatic plates, in the matter of color rendering than when ordinary daylight is used as an illuminant. The best result, in work of this kind will be obtained when generous exposure has been given and the negative developed in a dilute solution in order to produce the greatest possible contrast, at the same time avoiding anything like harshness.—*The Amateur Photographer and Photographic News.*

COLORING BRASS

To color brass a blue-black steel color, the articles should be well cleaned and immersed in a boiling solution of chloride of arsenic. If very carefully cleaned, the articles may be colored azure blue by immersion in a concentrated solution of sulphite of soda. A deep blue-black may be produced by immersion in a solution of carbonate of copper and ammonia, and subsequent exposure to air. But hyposulphite of lead and soda will give many variations of color. To 100 c.c. of 10 per cent. solution of hyposulphite of soda 5 to 6 grams of sugar of lead are added. Dissolve by heat, filter, and heat again to 70 degrees C. When first plunged in this solution, brass assumes a golden color, and then passes through various shades of orange, vermilion, scarlet, and violet, at last to azure blue. Further action will change the blue to a silver-gray color. A matt black may be produced by immersing brass in a weak solution of chloride of platinum and nitrate of tin; bronze color, by immersion in a boiling solution of sulphate of copper and alum. A golden color may also be given, by treatment with 4 parts of caustic soda, 4 parts of milk sugar, and 100 parts of water. In all cases, as soon as the requisite color is attained, the articles are at once transferred to clean water and rinsed. After drying, they should be coated with celluloid varnish.

When you see this seal on the container:

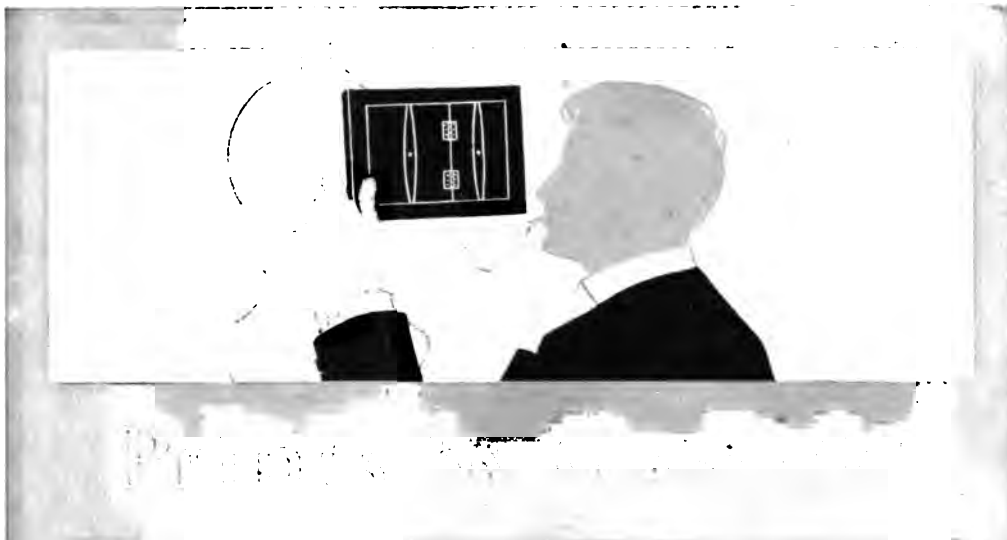


you are certain that the contents are exactly what they should be—as certain as we are before the chemicals are allowed to leave the factory.

Specify and insist on E. K. Tested Chemicals and the possibilities for “trouble” from impure or improperly compounded chemicals are automatically removed.

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Volume Twenty

FEBRUARY 1916

Number Two

PIN HOLE PRACTICE—C. H. CLAUDY

WHILE it is true that one of the advantages of the pin hole is that it requires no focusing—that no matter where the plate is put with relation to the hole it will be in focus, it is necessary to have some sort of device which will allow us to see just what is upon our plate. He who has a battery of lenses can solve the problem if he will be putting in place one of approximately the “focus” or distance between lens and plate of the hole he proposes using and so see what composition he may have. But a far easier method is to have a front board for the camera, which has upon it a one-eighth-inch hole bored through a plate of blackened brass.

This one-eighth-inch hole will act like a pin hole in forming an image. True, the image will be sadly confused and altogether unfit to use as a means of making a negative. But it will give, in blurred masses of light and shade, the *position* which the various objects in the field of view have upon the plate and that is all that you require of it.

As you will speedily learn by experience, and can know beforehand by referring to tables of exposure of various needle holes, which can be obtained while the angle of view is entirely at your choice, there are practical limits beyond which it is not wise to go. Nor is there need for going beyond these limits. From two to twelve inches on a 4x5 or 5x7 plate is all the leeway any ordinary picture can possibly require.

To get any great angle, it is altogether essential that the hole be minutely thin at its edge. If we bore a one-inch hole through a two-inch board, the angle of view possible through this hole is something less than fifty degrees. If we bore a sixtieth of an inch hole (about the size of a No. 10 needle) through a brass plate a thirtieth of an inch thick, the result is the same. Hence the need for counter sinking with a drill until the metal is of tissue thinness in the center.

Another method of counter sinking is to take a thin, small sheet of brass and press upon it with a dull point so that a little boss or mound appears on

the reverse. Rubbing this down first with a fine file, then with an oil or water stone, will thin the metal to tissue fineness in the center. It is in this tissue fineness that the hole is to be made. But fine holes are not made merely by running a needle through. The needle should be gently twirled and pressed through the metal until just the point appears. If now the hole be examined with a magnifying glass, little slivers of brass will be seen standing up all around the edge. These should be scraped or cut off with a sharp knife. Insert the needle again, and repeat the examining process and the cutting off of the ragged edges. What is wanted is a perfectly smooth, perfectly round hole, with the thinnest edges and no projections. Such a hole properly blackened is a treasure, and worth working to get. A poorly made hole will give a picture, but reflections and interference phenomena of light will ruin its purity and its quality.

Before passing to the question of exposure, it is necessary to say a few words about the relation of the size of aperture and the plate distance. For there is the same difference in needle holes, as to size, that there is in diaphragms in a lens. Holes of minute size look the same in size to the eye, but are vastly different in the camera.

The further back the plate is, the greater the apparent definition obtained with any needle hole—just as a lens with a half-inch diaphragm gives a greater definition if it is twelve inches in focus than if it is six. Definition, with a needle hole, increases with the decrease in its size. So, unfortunately, does the degrading of the image, due to reflections from the sides of the needle hole. And no matter how thin the material from which it is made, or how carefully it is blackened, those reflections are going to be present. Hence the small-sized needle holes should be employed with caution. As the large size holes give too much diffusion, there is a very practical set of limits in needle hole sizes.

For all practical purposes, needles Nos. 10, 11 and 12 will be found about the best, the first giving a hole about 1-55 of an inch, the second about 1-65 and the third about 1-75 of an inch in size. With these three apertures and a focusing hole, you are equipped for almost any sort of pin hole photography.

It is true that a needle hole exposure must be long compared to those exposures which we are accustomed to give with a lens, but it is idiotic to state, as some have stated, that over exposure is impossible with a needle hole. An exposure of a minute may be long compared to a hundredth of a second, but if a minute is a correct exposure, certainly ten minutes would not give a good image!

Nor are needle hole exposures by any means as long as the size of the aperture would indicate. There have been needle hole exposure tables prepared by calculating exposures for needle hole apertures behind a lens. For instance, if an eight-inch lens has a one-inch aperture, it is styled $f8$. If it has a half-inch aperture it is $f16$. If it had an aperture of one fifty-fifth of an inch it should be $f440$. As the exposures of an identical subject are proportional to the squares of the f values—an $f16$ lens requiring four times the exposure to



"AN AUTUMN IDYLL," FIRST PRIZE, THE CAMERA COMPETITION NO. 200
J. H. FIELD, FAYETTEVILLE, ARK.



"GIRL WITH THE RUFF." SECOND PRIZE, THE CAMERA COMPETITION No. 200
ALICE WILLIS, ST. LOUIS, MO.

produce a given effect to that needed by an $f8$ lens—then the $f440$ lens ought to need 3,025 times as much exposure as the $f8$ lens. If the $f8$ lens needed a hundredth of a second, then the pin hole should require thirty and a quarter seconds.

But it doesn't!

The makers of such tables forget that lenses in some measure absorb, reflect and diffuse light. The actinic value of light which has passed through a lens is not so strong as direct light, such as passes through a pin hole. Photographers who use spectacle lenses for pictorial work are aware of this fact, and know how brilliant the images such thin and simple lenses supply. It is the same with the pin hole, if not more so. Grave and highly scientific articles have stated that a pin hole is from two to ten times as effective as a lens of similar plate distance and aperture. No one seems to know exactly. But the two is more accurate than the ten.

To give an accurate exposure table is hardly worth while. Experience is the best teacher. But as an example, and to start you off on your pin hole career, let us suppose you wish to take an average landscape, that it is the present time of year (February), that you are using a rapid plate, have bright sunshine, a No. 10 needle hole eight inches from a plate. You will probably find fifteen to twenty seconds to give you a first class negative.

There is nothing prohibitive in such an interval. Indeed, when night photographers often give an hour or two to a picture, no one should object to a few seconds, or even minutes for pin hole work. And early in the morning in the winter, if working in shady places or glades, where the light is poor, it may be necessary to run the exposure to an hour or more. However, for such exposures the best advice is Punch's—Don't. Wait for a brighter light or use a shorter plate distance.

Don't forget that plate distance has a great effect upon exposure. Having determined the proper exposure for any given plate distance, don't forget that the formula for determining exposure for other plate distances is the same as for a lens—the exposure varies as the square of the distance. If you need twenty seconds at eight inches, for sixteen inches you require not double, but four times that exposure with the same pin hole. The square of eight is sixty-four. The square of sixteen is two hundred and fifty-six. Two hundred and fifty-six is four times sixty-four. Therefore, the longer plate distance requires four times the exposure of the shorter.

One of the points in which pin hole practice gives the lie to ordinary photographic practice is in the matter of contrast and points of light. In ordinary photography, we tackle views with great contrast, strongly lit foregrounds and deep shadows, pictures in which bright sunlight and shade alternate, with some misgivings. Too often have hard, harsh results been ours in such circumstances. But with the pin hole we need have few such fears. The actinic power of unrefracted and reflected light is such that even the faint shadows have no difficulty in making a good impression on your plates. The greater the light, the better, and contrast is little to be feared.

This little paper has purposely refrained from the usual attempt to give a long and exhaustive table of exposures in which there is a unit with which to start, an allowance to be made for size of hole, time of day, time of year, plate distance and a few other factors. Half the fun of pin hole photography is working these things out for one's self. So is the use of the three sizes of hole. Beginning with the No. 10, it will speedily be found that certain results are too coarse—use the No. 11 or 12. It will be found that different needle holes give different and better results than others at various plate distances. These too, are the things it is a joy to find out by experiment.

But, whatever you do, keep on until you make *one* good negative by the pin hole. Thereafter, whether you practice it or not, you will forevermore have a great respect for lensless photography and the queer but potent powers of a needle hole in a piece of blackened brass.



"THE DRIVING SNOW." THIRD PRIZE, THE CAMERA COMPETITION NO. 200
W. R. BRADFORD, PHILADELPHIA



"PATIENCE." FIRST PRIZE, THE CAMERA BEGINNERS' COMPETITION No. 2;
INDOOR PORTRAITS ELLA R. CHASE, SEATTLE, WASH.



"CHILD PORTRAIT." SECOND PRIZE, THE CAMERA BEGINNERS' COMPETITION No. 2;
INDOOR PORTRAITS. ED. J. PURCELL, NEW YORK CITY

PAPERS FOR THE BEGINNER — SOMETHING ABOUT THE LENS

WE all remember when we were quite young, watching the path of the sun's rays as they entered the window and fell upon the floor. Light is an invisible agent and it is only by the illumination of the particles of dust suspended in the air, the "little motes that people the sun-beam," that we perceive that the rays of light are perfectly straight lines. Now light always travels in direct straight lines no matter from what source it originates, whether from the great sun itself or the tiny taper, and it radiates in all directions. Now the question is how do we see objects? The answer is we see external things because the light reflected from their surfaces passes through an optical instrument called the eye and images or pictures of things are projected upon a surface at the back of the eye called the retina. In other words our brain makes use of a camera to inform itself of what is going on outside. Now this is just what photography does. It makes use of a lens and a camera with a retina, only we call it ground-glass instead of retina. If we hold a white card at some little distance from a lit candle, we have a uniform illumination of the card itself. The light from the candle is reflected from every portion of



"TWILIGHT HAZE." FIRST HONORABLE MENTION, THE CAMERA COMPETITION No. 200
CLARENCE N. SMITH, SARATOGA SPRINGS, N. Y.

the card but we do not see on the card any image or picture of the candle as we would if the card were like a looking glass. But now let us simply interpose another card between the flame and the first card and pierce a small hole with a pin in this interposed card. What do we see if the room is rather dark? An inverted image of the candle projected upon the first card. Let us try to show what has happened so that you may get some idea what a lens is.

We told you that light proceeds from all objects in straight lines. Now suppose a number of lines proceeding from the candle, the small pin hole cuts off the superfluous rays, only the rays from the top of the flame can reach the card where the point of the image flame is. No rays except from the bottom of the flame can reach the bottom of the image, and as these rays go in straight lines and not crooked they have to cross each other at the pin hole entrance and so our picture of the candle on the card is inverted or upside down.

The smaller the hole in the interposed card the sharper or more distinct will be the image. But if we enlarge the hole, say to the size of a pea, we get a blurred or indistinct image, and if we go on making the hole larger we lose the picture altogether and get only an image of the hole on the screen. Now a lens acts in the same way as this small pin hole in forming the picture upon the ground-glass of the camera. This we shall try to show in our next paper.



"THROUGH THE VEIL OF SNOW." SECOND HONORABLE MENTION, THE CAMERA COMPETITION No. 200. WILLIAM LUDLUM, JR., MT. VERNON, N. Y.



THE LATE MANLY W. TYREE, EX-PRESIDENT P. A. OF A. DIED JANUARY 1, 1918



LOUISE GRASSLER

A CAMERA RANGE-FINDER

FRANCIS M. WESTON, Jr.

WHEN one graduates from the box camera class and acquires a focusing instrument, the most serious question which presents itself—and the trouble is that it is repeatedly presenting itself—is “what distance?” One has no more idea of yards and feet than the backwoodsman had of miles when he spoke of a certain distance as being about “two whoops and a holler.” Many amateurs can soon learn to estimate their distances with a fair degree of accuracy, but there are many other unfortunates, beside myself, who continue to get blurred pictures until patience and pocket money are on the verge of exhaustion.

Fortunately, before discouragement became complete, I happened across a solution of my troubles which saves my film with certainty, except when I have to snap in a hurry. I had seen a very ingenious device consisting of an auxiliary lens and bellows, which, when attached to a camera, made it as easy to manipulate as a reflex. The only drawback was the care and accuracy needed to make and fit this focusing attachment—a degree of precision being required which is beyond the power of any but a trained mechanic. Expense was also a serious factor. However, with this idea to work from, I devised an instrument which is simplicity itself; and, while not nearly as efficient as the more highly specialized attachment just mentioned, it is a great convenience.

Provide two tubes of stout cardboard about 2 inches in diameter—thin brass would be better—one of which is of a size to just slip within the other. An auxiliary copying lens (or a spectacle lens of about 7-inch focus), a piece of ground-glass, a few scraps of cardboard and a little glue, and we are ready to start to work out our salvation.

The lens is mounted on the end of the larger sized tube, and the tube cut off to a length of one inch more than the focal length of the lens—about 8 inches. A piece of the smaller tube is cut 2 inches longer than the large tube, and an eye-piece of cardboard pasted on one end. In this longer tube, 4 inches from the eye-piece end, is fixed a screen of ground-glass or even of oiled paper.

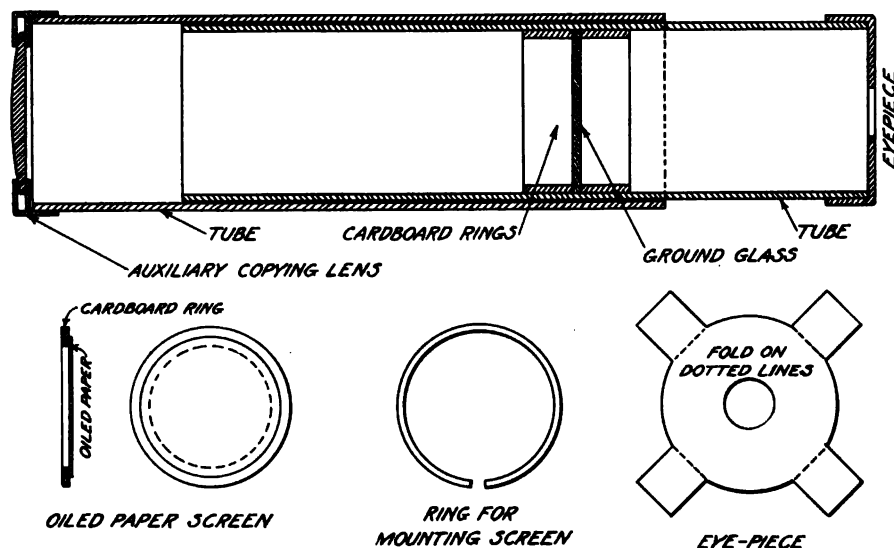
Now for some of the details of construction. The copying lens can be slipped on the end of the tube if it happens to be of the right size. If not, the tube can be made larger or smaller by simply pasting one or two rings of cardboard on the end. The eye-piece on the longer tube is a piece of cardboard with a round hole $\frac{1}{2}$ inch in diameter, cut out of the middle of it. The screen is more easily handled if it is circular, and of a size to slip within the tube. Two strips of cardboard are cut of such a length that, when they are bent into rings, they will be a snug fit in the tube. One of these strips is covered with glue, bent around, and slipped into the tube to the desired position. It is glued there, then the screen slipped down against it, and the other ring glued on the other side of the screen to keep it in place. If the screen is not of such a shape that it can be secured in this manner, it may be glued to a disc of stiff cardboard which has a hole cut out of the center, and this piece of cardboard may be fixed between the

glued rings as just described. If oiled paper is used as a screen, it may be treated in the same manner.

Now to test this instrument, select some sharply defined object such as a white pailing fence or a weather-boarded side of a house, and measure off from it the distances marked on the focusing scale of your camera—4, 6, 8, 10, 15, 20 and 25 feet. Now slip the open end of the small tube into the open end of the large one, and take your stand at the first mark. With your eye to the eye-piece, sight at the object and slide one tube within the other until you have a sharp focus on the screen. Then, with a sharp pencil, mark the smaller tube at the larger one and number the mark 4. Step back to the 6-foot point, focus again, mark, and number the mark 6. Repeat this at each measured point until you have a set of marks on the tube corresponding to the marks on the focusing scale of your camera. For distances over 25 feet, the use of the range-finder will hardly be necessary, as anyone can estimate these distances near enough to get a reasonably sharp picture.

To use this device, simply point it at the object to be photographed and slip one tube within the other until the image is sharp on the screen. Then read the mark at the edge of the larger tube, set the focusing pointer on your camera to the corresponding mark, and fire away. As this operation of finding the proper distance and setting your camera for it takes but a few seconds, the range-finder can be used in all cases except where a snapshot has to be taken on the spur of the moment.

A much more convenient form of this range-finder can be made with a spectacle lens of *exactly* the same focal length as your camera lens. Some ingenuity must be brought into play to mount the range-finder on the camera so that the lens tube will slide as the bellows is racked out; and you will have a direct view which will also tell you when your camera is focused correctly.



A SUCCESSFUL ENLARGING CAMERA

J. ALBERT BOGART

HAVING been quite successful with my first camera, in obtaining some good pictures, I was seized with a desire to make an enlarging camera. Several magazines that came to my notice, contained contributions on how to make an enlarging camera, but I was not content to accept some of the crude designs that appeared; however, they were practical.

For some time I gave considerable thought to the details of construction and argued that a poorly made camera would give but half the pleasure and satisfaction of a good one, so I set to work and constructed it along my own lines. Aside from the principles that govern, to a certain degree, I was quite particular as to the design of my apparatus.

I met with numerous obstacles in my undertaking, my patience being tried many times, but I managed to pull through with success.

Having had access to a pattern shop, where the pieces of soft pine were cut to length and dressed, the frame was completed without any trouble. These frames that support the bellows are two and one-half inches wide, one-half inch thick, and nine inches long, forming the square. The size of the light box being of the same thickness of material, eight inches wide and nine inches square. One-inch pieces, nine inches long and six inches wide were used to fasten the frames to. These were fastened to two long strips, eighteen inches long, one inch thick and two inches wide. Between these two pieces, and acting as a rack for the frames to slide in, was a piece twenty-four inches long, one inch thick and six inches wide. A threaded machine screw was countersunk in the base, which provided a means for focusing. This is the small handle shown directly in front of the camera.

The bellows was quite a problem at first thought, but through the assist-



ance of my father, who had experience years ago when both amateur and professional were obliged to make most of their apparatus, I was able to accomplish the result with little difficulty.

A pair of eight-inch condensing lenses was used, each one being mounted separately in tin tubes, or rings, made by the tinner, and were held in place by snap rings, one lens working inside the other after the fashion of the toy magic lantern. This means gave access to focusing the condensers independent of each other and of the projecting lens in the front of the camera. This arrangement is well illustrated, showing the camera disjointed, displaying the condensers. Another feature not to be overlooked, is that each element namely, the source of light, condensers, negative rack and the projecting lens are all focused independent of each other. The practical photographer will readily see the value of this construction. The camera was constructed in two parts, connection being made by use of snap fasteners in the sides of the frame, which hold the sections firmly together.

The negative carrier consists of a light frame, made to hold two pieces of glass, between which the film is inserted. This holder slides freely in the second frame and is shown to advantage laying beside the camera in one of the illustrations.

The camera is fitted with an extra flange ring which takes the projecting lens in front, this lens being the one used to take pictures and a part of my regular graflex.

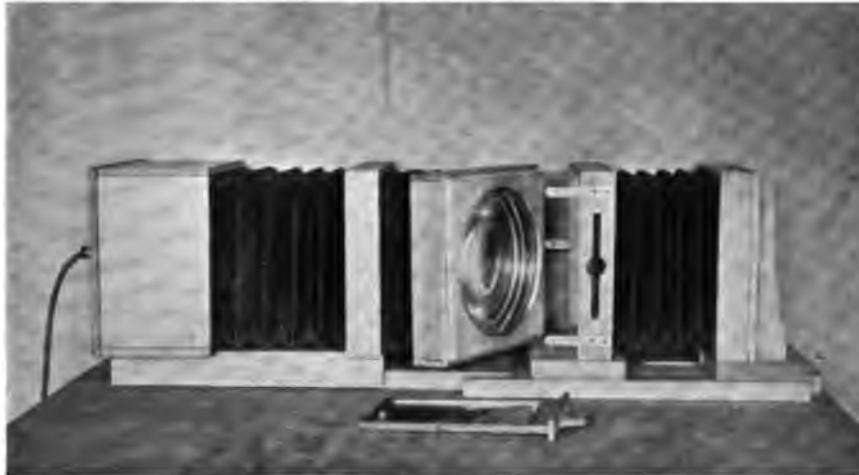
Electricity is used as a source of illumination, which proved very satisfactory on account of its steadiness. An electric light socket was fastened in the center of the back of the light box to receive a high power Tungsten lamp.

Screws were used throughout to fasten the frame together and the bellows was first glued and then bradded to them. An application of black paint would improve the general appearance of the camera but as it was necessary to pho-



tograph it, I wished to show the details as clear as possible and left the finishing touches to be put on later.

Owing to the flexibility of my apparatus in regard to the scope and freedom of focusing, enlargements can be made from negatives five by seven and smaller up to any size desired, giving one about all that could be wished for in an enlarging camera.



PROPER SPACING

A PICTURE, in one sense at least, is the result of the harmonious arrangement of the parts composing it within the space allotted. Pictures are often judged solely from the analytical point of view, and the critic dissects them, as it were, to judge the individual features and their relation to the collaborated whole, but a picture, approached in this way, causes the beholder to miss the true appeal of the subject to his artistic feeling. To feel the full import of the picture, it is necessary to perceive it at once as an entirety. It is in this way that we get the true conception of the artist, inasmuch as the original from which his picture was derived must have affected him synthetically, not analytically.

The question then which the photographer, who aspires to the pictorial intent, must ask himself when he undertakes to make a picture within the four boundary lines enclosing the space allotted to it, is, how will the management of the elements of the picture affect the beholder at first sight?

He must select and so adjust the parts as to produce a pleasing effect. He must consider both the lines and the masses of his picture, with relation to the character of the isolated space he has chosen for its presentation, for the very same elements will comport themselves differently, according to the form of the quadrilateral, whether it be placed vertically or horizontally. This is

a point too often overlooked, and many a subject which presents no pleasing aspect when shown with the long side of the quadrilateral, as the base becomes a delightful picture simply by a vertical presentation. The perspective is changed, and unpleasant lights and shades eliminated, and incongruous lines brought into harmonic relations. Then again, the boundary lines of the space must be consulted as to their association with lines in the picture. For instance, we notice how skillfully Raphael, in the painting of the "Sistine Madonna," where he is constrained to fill a circular space, avoids offending the eye by bringing any straight line in opposition with the circular boundary. It is impossible to formulate rules to guide the photographer in his distribution of the various parts of his picture. Indeed, the photographer would miss the lesson of this tract if he attempted to construct according to rule. He must



IMPROPERLY SPACED. HAMMER PLATE NEGATIVE

feel, as it were, the effect. He must cultivate his taste by studying examples of good effect, and therefore, we feel that nothing can better interpret our effort to aid him than a good object lesson.

We reproduce two pictures by the same photographer. Each represents practically the same subject, but one is a pleasing picture, the other an association of discordant parts. These photographs hardly need further comment, they speak for themselves, but you may note how the simple shifting of the camera excludes the unpleasant repetitions manifest in the one view, and brings the discordant unrelated masses in harmonic relation. A study of these two views demonstrates the value of a cultivation of the perceptive powers, and the importance of synthetically studying a subject, appreciating it as an entirety, not as a patchwork of parts.



PROPERLY SPACED. HAMMER PLATE NEGATIVE

PEN AND INK DRAWINGS OVER PHOTOGRAPHS—SAMUEL H. AVERY

IT is sometimes desirable to make pen and ink drawings for reproduction or to decorate the home. While etchings from line drawings are not considered superior to half-tone plates, they often serve the purpose better, especially where cheap paper is used for printing. Then, too, there is a difference in the price of the plates, say about 7½ cents per square inch for zinc etchings, and 15 cents per square inch for half-tones.

Aside from the commercial use of the pen and ink drawing, it makes a nice decoration when properly mounted and framed. The snap in a pure black and white pen drawing is hard to equal in other processes. Those who wish a variety in their home decorations may try inking-up one of their favorite scenes. It takes the ability of an artist to originate or sketch a subject, but it is not so difficult to go over a photograph or silver print that gives the outline, with light and shade.

The first thing to consider is the choice of paper. If gas-light paper is used there is a variety of surfaces to choose from. Most varieties are all right except the glossy finish, which has too smooth a surface for the ink to adhere to,



No. 1

and when the original image is bleached away it will wash off. What is known as "Silver Print" paper is used more than any other kind for this class of work. It is a sensitized Sachs paper, the making of which is not a part of this article, but it can be obtained at most photo supply houses. Blue print paper is also used and is suitable, if the paper stock is of good grade. What is known as "Negative" paper, made by blue print manufacturers, is also good and is made on good stock. This gives a variety of paper that can be used, and one may use the paper most suited to his taste and convenience.

The pen can be most any fine pointed pen, but a drawing pen is the best; it is not as stiff as a writing pen. Gillott's No. 290 is a good one for fine work.

The ink must be of the water-proof variety so it will not wash off when the silver print is being bleached. Higgins' Water-proof India Ink seems to be the best. A general drawing ink that is not water-proof is also supplied, and the two should not be confused.

Before starting to ink the photograph it should be thoroughly cleaned with a wad of cotton slightly dampened, and if this does not cut the grease, a little ox gall, dissolved in water, will do the work. Another method is to rub saturated cotton on a cake of Gelatine, then on the photo. If the photo is not greasy, all this trouble is unnecessary, and it is not required on silver and blue print paper.



No. 2

Starting to ink-up the picture, we must consider the light and shade, and cover it with lines to equal the values of the original picture. This will mean that the shadows, in proportion to their density, will need more and heavier lines than the high-lights. The kind of line or technique is a matter of choice, and depends on the skill of the individual to handle a pen. Every pen artist develops a style of his own, which is developed with no small amount of practice and hard work.

The best method for a beginner is to get a good pen drawing, study the lines used and use similar ones. When making drawings for reproduction by zinc-etching, the drawings should be made at least twice the size of the desired plate, and the lines should be kept a little coarser to allow for reducing.

When making a drawing merely for decoration purposes, a much finer line may be used, and it will have more the resemblance of an etching, especially if a sepia ink is used.

It must be remembered that before the original photograph is bleached away the ink lines will look much darker than they really are, and when the bleaching solution is used the drawing will lighten up considerably, therefore, enough lines must be used to retain the original values in the photograph.

After the print is inked-up and is thoroughly dry, it is ready for bleaching, which is a very simple process, similar to beaching a print before re-developing. A piece of cotton is saturated with the bleach and gently flowed over the print until it becomes white and there is none of the original image left. Although the ink is water-proof, care must be taken not to rub it too much or it might loosen up and come off. After bleaching, the print is thoroughly washed and dried.

Various bleaches may be used, but the following are in general use:

For prints on the regular gas-light paper, use 2 drams of saturated solution of Iodine and 2 drams of saturated solution of Cyanide of Potassium diluted with water. Wash after the bleaching. This latter chemical is a deadly poison, so one must be careful when applying it.



NO. 3



NO. 4

For silver print and negative paper, a saturated solution of Bichloride of Mercury is all that is needed. Wash after the bleaching in water slightly acid. Any alkali will restore the image.

For blue print paper a fairly strong solution of common Bicarbonate of Soda bleaches very nicely. Carbonate of Soda will work, but it turns the paper yellow.

The following explanation of the illustrations accompanying this article will help to give a better idea of how the drawings are made, and how they appear partly bleached and completely bleached.

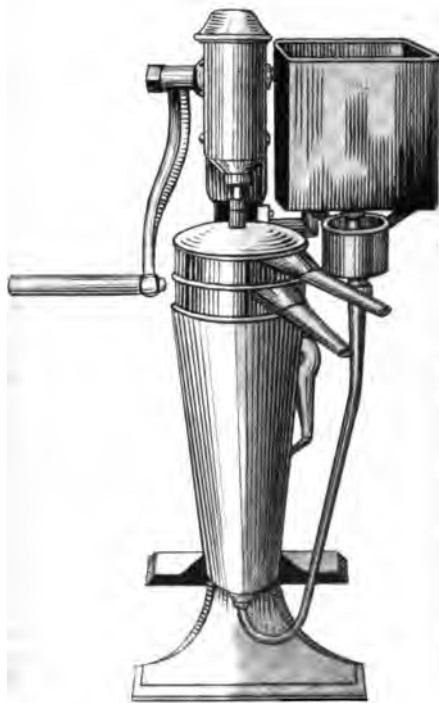
No. 1—Straight photograph, printed on Professional "Cyko," linen finish.

No. 2—Same negative printed on "Azo" Grade D. Inked-up with Higgins' Water-proof Ink, and bleached as described in article.

No. 3—Shows partly inked print on negative paper.

No. 4—Same print as No. 3, finished and bleached.

No. 5—A print on silver print paper, the inking-in finished, but the print only half bleached.



NO. 5

SAVING NEGATIVES—C. W. BURROUGHS

THE use of retarding, reducing and rehalogenizing agents in modifying and saving over-exposed, contrasty or halated negatives is but little appreciated. When one's work is confined to the skylight, where the lighting is under complete control, has little use for other methods of control of contrast than such as may be had by a modification of the developer. It is the landscape or commercial photographer, with the constantly varying conditions of over or under-lighting, that needs such assistance. And, when I see the time and labor spent by many in various expedients to overcome contrasts or discard a negative as worthless that by proper treatment might be made to give a satisfactory print, I wonder so few have learned to make a proper use of the easy chemical agents they have at hand to give them far better results.

Of the three methods of control mentioned, retardation, or holding back over-exposed parts in development is first; for when we are developing we can completely overcome or so greatly modify the effect of too much light that our negative may be made to yield a normal print by a very little dodging. But to be able to do this we must know just what to do before we start development. In other words, we must know that certain parts will come out in a normal developer far too strong, and that they must be held back in development until the shadows have caught up with the high-lights. There are two valuable assistants to help us in such a quandary. Prepare a saturated solution of bromide of potash—also a saturated solution of carbonate of soda, to which add of a saturated solution of citric acid sufficient to neutralize the alkali. A little more of the acid solution should be added so that the solution may be slightly acid. To a quantity of the bromide solution add an equal amount of the citrate of soda solution. Prepare also a fifty per cent solution of acetone sulphite. Either solution may be used with any developer, but better results will be secured with the bromide citrate solution where pyro is used as a developer or where hydrochinone is the principle developing agent.

With other developers acetone sulphite will be found more satisfactory. For the method of using, you will need some pieces of absorbent cotton to use as swabs in applying the solution, which should be conveniently at hand in a graduate or other vessel. Start development with a normal developer. At the very instant of the first appearance of any trace on the negative, rinse well in a tray of clean water. There will be enough developer still left in the film to bring out a fair outline of the negative, and the over-exposed parts will be quite well defined. Now, to these apply the restraining solution you have selected, using a swab, and as far as possible, keeping the solution from running on adjacent parts. If the part is fairly large, a good sized swab used not too wet, and kept moving for three or four minutes will prove sufficient to saturate the film. The negative may then be developed in the normal developer, and treated as usual. Where the over-exposed parts are, small pieces of cotton may be strapped to them, after dipping in the restrainer and

squeezing out the surplus, and placed upon the parts, and with a dropper, applying the solution to the cotton.

An addition of one dram of the acetone sulphite to each eight ounces of developer, aside from pyro, will be found of great benefit in assisting to overcome the results of over-exposure and halation.

A few have secured good results from chemical reduction, because they would leave the shadows alone and work solely on the high-lights, reducing them to a proper balance with the shadows. I have tried about all the chemical and mechanical methods of reduction and have found nothing better than Farmer's solution of ferricyanide of potash and hyposulphite of soda modified by the addition of bromide of potash. It is usually advised to make up a solution of the ferricyanide of potash and add the hyposulphite of soda thereto.



"MOTHER AND BABE." THIRD PRIZE, THE CAMERA BEGINNERS' COMPETITION NO. 2;
INDOOR PORTRAITS. HARRY A. GRAHAM, OIL CITY, PA.

I get better results in local reduction by working on the negative as it comes from fixing bath before washing. Sufficient hypo being retained in the film to secure a perfect chemical reaction in developing the excess deposit of silver. Make up a saturated solution of ferricyanide (red prussiate) of potash in a yellow glass bottle, as it is sensitive to light and is decomposed by it. This is a stock solution. You will need two or three small brushes of different sizes, and some swabs of absorbent cotton tightly wound upon sticks with which to apply the solution. A newspaper or other white surface to reflect light up through the negative. Prepare the reducing solution by adding to four ounces of water, one dram from the stock solution of ferricyanide of potash and one dram of saturated solution of bromide of potash.

The plate is now taken from the fixing bath and allowed to drain for a short time, then holding it by one corner over the reflector, one of the brushes or swabs is dipped in the reducing solution, pressed against the side to get rid of the surplus solution, and applied to the part to be reduced. It is important that the brush or swab be kept in constant motion over the surface to be reduced, that the light be reflected up through the negative, and that the negative be rinsed under the faucet or in a tray of clear water very often to prevent the reduction of the adjacent shadows. Patience is a necessary adjunct, for rapid action of the reducer is an invitation to disaster and failure. When reduction shows up, rinse the negative and return to the fixing bath for five minutes to absorb more hypo and proceed as before. Several immersions in the fixing bath may be necessary before the result desired is attained. It is also important that reduction should not be allowed to proceed to the full limit of the reduction desired. Stop when there is a trifle more strength apparent than you desire and put plate in the fixing bath for ten minutes and your negative should come out nicely balanced as to light and shade.

With those negatives, which through fog or over-exposure, the shadows have been badly veiled, we need an entirely different method of reduction. We need the density in our high-lights and we want to cut away the deposit in the shadows as rapidly as possible. Adding one half ounce of the stock ferricyanide solution and one half ounce of a saturated solution of bromide of potash to six ounces of water in which one dram of hyposulphite of soda has been dissolved. The plate taken direct from the fixing bath is placed in a tray and the reducing solution added to the tray and kept rocking. Only a few seconds action must be allowed before examination, as the action of the reducing solution is very rapid. Action must not be carried too far or the high-lights will cut away too much.

There is a certain amount of manipulation necessary to acquire in using the brushes or swabs, and some judgment of when reduction should cease, but nothing that anyone may not easily learn after two or three attempts on discarded negatives.

There is still another method of bringing success out of apparent failure that is even less used than those mentioned but which once mastered will always be held in high repute.

Rehalogenization is a long word that is used to define that condition of the silver in the film which we can, by a developing agent, reduce from an unstable to a stable form and in which we can dissolve away part unacted on by the developer in the fixing bath of hyposulphite of soda or cyanide of potash and have, as a result, a negative or positive. When we have made a negative and find it badly halated as in a brilliantly lighted foliage against a sunlit sky, or an interior with windows defined but unprintable, we can rehalogenize our negative, redevelop it and after fixation, have a good printable negative. There are several methods by which we may secure the same result, but the one given below will be found easy to work and certain in result where the operator, by trial, has mastered the details needed to succeed.

Prepare a solution of one hundred and twenty grains of bichromate of potash in ten ounces of water, add one dram of nitric acid. The negative, after thorough washing to free it from hypo, is placed in a tray and the above solution poured upon it and allowed to act until the negative is completely bleached through to the back.

The negative must now be well washed to free it from the yellow stain of the bleaching bath, and it will be found that a couple of immersions in a fairly strong alum solution, finally washing in several changes of clean water, will greatly assist and hasten this operation. Now using any developer but pyro the plate should be redeveloped. The developer must be quite weak and well restrained with bromide and development should take place in well diffused light, as the whole operation may be conducted in the light of the work room. Development should be quite slow and continued until the shadows and all parts not needing reduction are blackened quite through to the backs. The parts showing halation will be very clearly defined upon the back of the plate as redevelopment progresses, action of the developer being much slower in those parts. The secret of success in the operation lies slowly in the acquirement of judgment as to when redevelopment has gone far enough. In halation it is to be remembered that the deposit of silver that causes the trouble lies at the back of the film next to the glass, hence, we want to leave it in such condition that we can get rid of it. We must carry development far enough so that there is a slight deposit in the clearly defined halated parts, but not far enough to blacken them. After washing, the negative is placed in the fixing bath, and if development has been correct, will come out almost free from signs of halation.

If a mistake has been made, the operation may be repeated after well washing the negative free of hypo.

The methods here given for control and saving of negatives are not offered as new or original, but only as those which in an experience of a good many years as a commercial and news photographer have been found efficient and workable. There is nothing particularly difficult in working any of the processes. A little patience and earnest desire for better work being all that is needed.

THE TRIALS OF AN AMATEUR LEONARD O. IHLAND

IN reading books on photography, articles in photographic magazines, instructions accompanying photographic materials, etc., one will find that they are written for those who already possess, or have a place to construct into a dark-room. Rarely, except in articles recommending tank development, will one find suggestions for those who have no dark-room and no possible place to arrange as one.

How many of the photographers who have model dark-rooms, with up-to-date equipment, would undertake to produce pictures under the conditions that confront some of their less-fortunate brothers? Only about 25 per cent of the amateur photographers, who do their own work, have a resemblance of a dark-room. Of the other 75 per cent, some work in a small clothes closet, where they have to take everything out when they do their developing, and put them back when they are through, and where they are so cramped from lack of room that they have to have one of the trays on the floor under the work-bench; others possibly do their work at night.

Instead of proposing a plan for a dark-room, I will tell of a few incidents in my own career as an amateur photographer, from which the reader may be able to pick up a few ideas.



"POSITION, PLEASE." FIRST HONORABLE MENTION, THE CAMERA BEGINNERS' COMPETITION No. 2: INDOOR PORTRAITS. E. S. SNYDER, VANCOUVER, B. C.

When I first started in as an amateur, I was working as a farmhand and used a $3\frac{1}{4} \times 4\frac{1}{4}$ plate camera of the old-box type. Having no room of my own to work in, all my developing was done in the barn basement, after my day's work in the field was finished. My equipment consisted of an old printing frame, that was discarded by the local photographer, three ordinary china soup plates, which were used as trays, a dark-room lamp made from a large cigar box. (At one end of the box was fastened a piece of $\frac{5}{8}$ -inch board, 5 inches square, to serve as a steady base. In the bottom of the box I cut an opening $3\frac{1}{2} \times 4\frac{1}{2}$, into which was fastened a piece of ruby glass, by strips of wood cemented around the edges. The lid which now was the back of the lantern was perforated by four small holes to let in the air. A candle was fastened to the bottom by a piece of tin, the top of the lantern was also protected by a piece of tin, to keep it from getting on fire. A plate washer made out of boards, (a box 4 x 5 x 10 inches with grooves every $\frac{1}{2}$ inch apart to slip the plates into and hung in a spring, located near the house, washed the plates perfectly; not perfect plates.)

All printing was done on printing-out paper, as it was the easiest to work, and because it was the paper most generally used at that time. I once spoiled a plate in a rather novel way while printing on P. O. P. On an extremely hot summer day I placed a very dense plate in the sun to print. In attending to some other work I forgot the plate and left it printing for about an hour. On returning I found that the heat of the sun had melted the gelatine and my picture was a blurry mass of nothing.

My printing masks were cut out of dark brown wrapping paper. Some novel designs were made by pressing leaves of oak trees, pointed with lamp black against a piece of paper and then cutting out the impression. To trim my prints I used two pieces of glass. The print was placed face up on the larger piece of glass, the smaller piece was placed on top and acted as a transparent trimming gauge. By cutting along the edge of the smaller glass against the bottom piece, a clean edge was obtained. (I have never discarded this method.)

The next year, while attending a preparatory school, I rented a room from an old lady, who objected to my use of the bathroom as a dark-room, as she claimed that the chemicals stained the bowl, and therefore I had to devise some methods to darken my room. I made a frame of four pieces of board fastened in each corner by a thumb screw; over this was hung a focusing cloth and the frame slipped into the window. This made a perfectly light-tight window covering, when not in use the frame was taken apart by loosening the thumb screws and put away. My study table was used as a work-bench and to prevent any possible stain it was covered with a piece of oil-cloth. Some of my developing and all the loading of the plate holders was done without the use of a ruby light. I placed a candle on the floor directly under the centre of the study table, this prevented any direct rays of light striking the plates but still gave enough light in the room to work with.

To get uniform prints I placed a yardstick on the table and held my

printing frame at the correct distance from the lamp, which was used as the illuminating power to print by.

Some years later I made a printing machine that works on the same order. A piece of board 20 inches long by 8 inches wide was used as a base. At one end was a raised platform 6 inches high; to this was fastened a piece of gas-pipe 4 inches long, on to this was screwed an inverted Linsey gas-light, while at the other end of the pipe was a stopcock from which a gas hose connected the light with the gas jet. At the other end of the base was a sliding easel, with a groove to place the printing frame in, by having the base marked off into inches, the correct distance and exposure of the print was obtained.

If one has a bathroom it may be made into a very nice, comfortable dark-room. With the window covered, place two pieces of board across the bath-tub, and laying a board 18 inches wide by 3 feet long over them, a model workbench is obtained. By having a couple of inches of water in the bottom of the tub, there is no danger of any stain and the water may also be used to wash the plates after development, before being put into the hypo.

In doing development for others I have found that they like the cleaner, sharper films produced by M. Q. developer, better than those produced by pyro. In printing also, the contrasty black and white pictures.

Here are a few little incidents that happened, which may be of interest:

It has always been my practice to cut apart any film that has a different exposure from the rest of the roll and develop it by itself to get everything possible out of it. One day I left my scissors in a different room and having a film with some very dense negatives, I was slightly puzzled how to go about it. Finally I placed the film in a wash-bowl filled with clear water, threw my coat over to exclude the light, and got my scissors.

Another day while in a hurry to finish a roll, I first dipped it into the tray containing the hypo. The mistake was noticed as soon as my fingers touched the edge of the tray (I have a different tray for each solution so that I can tell them by the touch), and by washing the film in a couple changes of water, before putting it into the developer, I got a good film; all negatives were very contrasty. I have later learned that some photographers put a few drops of hypo in the developer to produce contrasty negatives.

Once in taking a roll of film out of the developing tank I found that the negatives were only half developed. I washed the pyro solution off and finished development by hand in an M. Q. solution, that I had mixed for some prints, this film was one of the best that I have ever produced. It had both the printing quality and the detail, together with the softness of gradation that goes with perfect development.

My last experience was with a Graflex camera. I had expected to produce some wonderful results with this equipment, and was very much taken back when my first efforts did not surpass some taken with a 3A Brownie. One of my first pictures taken with the Graflex was at a ball game, when I snapped a player, (or thought I did) just sliding into the home plate. On

development I found that the player had slid over the plate and I only had half a man on my picture. On some trials at portraiture, taken at close range, I found the image distorted. It was nearly four months before I knew what my Graflex could do and how to use it.

In closing I will give this advice to all amateurs: "Do not despair if you have no up-to-date equipment, and a special dark-room. You can always produce good pictures if you have the talent. Of course, we all know that the more and better paraphernalia a photographer has, the better chance he has to succeed.

R. F. D. No. 7—MARGARET SAUNDERSON

OUR mail box is down at the "packing house" at the far corner of the place, just where the rural delivery man passes each morning, and during at least one hour of the twenty-four it is the object of our fervid interest, for, after years of seven miles' separation from the post-office, its convenience can not easily be over-estimated.

Down the long winding roadway that leads to it through the palmetto, I used to watch Flo's little white figure strolling every morning under the pines' swaying shadow, her dark head bent over the flashing knitting needles that go with her everywhere. She used to wait down there, sitting on an empty fruit crate—for our newspapers and those precious foreign letters of hers, from "ma bien aimee, Elise," or Justine, or for, "ces journals droliques" that her school mates occasionally sent her from the school at Neuilly.



"R. F. D. No. 7." MARGARET SAUNDERSON

Poor little, foreign-bred girl. So alien to her surroundings, so unprepared for them, so lovably anxious to adapt herself!

Last year when her father notified us that he was bringing her with him for a fortnight's visit, we rather expected a small child, forgetting the march of the years, until this demure little person appeared, close braided, long skirted, with eyes full of dreams. There had been nothing of entertainment to offer her, but she had smiled herself so prettily through those weeks that we suddenly felt very lonely and not too doubtful of the success of the visit when they finally departed. Her vacations were always like that, as abrupt and irregular as her father's comings and goings between this country and Europe, where his business constantly took him and where she passed her school life.

And then—the war, changing all things. With her father off to Buenos Aires and her last school term interrupted, Flo asked herself down here for the winter—and we hardly knew whether to be most alarmed or flattered. And such a modish little personage as followed the laden Pullman porter down the station platform, in a traveling suit, a la militaire, according to fashion's last decree! But, under the tilted campaign hat, such happy eyes met ours that we decided to be only flattered—and took her to our hearts.



"GRACE." SECOND HONORABLE MENTION, THE CAMERA BEGINNERS' COMPETITION
No. 2: INDOOR PORTRAITS. CHAS. G. SMITH, ELECTION, WASH.

But life on a big fruit ranch, many miles from town and neighbors, is a poor substitute for a girl's first season. Of course, such a place had its own activities—and leisures, but the routine changes only with the seasons, and the steady monotony of the weeks, each one repeating its predecessor, must be almost stifling to restless youth. And, of all who come and go about the groves and buildings, only ourselves are white.

Our boys used to dodge and twist to glimpse her, to get her nod, or just to see her pass as she would ramble through the groves, watching the grape-fruit picking and the mounting pyramids of the great golden fruit piling up for the packing house, until the maddening accumulation of the tiny sand-burrs upon her silk stockings would finally halt her beside a stump.

The Nassau negroes have a curious speech of their own—part English dialect, part Spanish phrase—and it was not long before our little guest had discovered that their songs were very sweet. Therefore it was that when the men came up to the house on Saturdays for their pay, two of the boys would covertly circle the verandas, looking for "Little Miss," and with doffed hats would chant for her one of their part songs in their rich negro voices.

Dick taught her to drive the new runabout—when he had time to go out with her, and he also gave her a new camera and cleaned up the boat-house dark-room, after which, Flo, whose photographic accomplishments had been heretofore confined to pressing the bulb, devoted herself to serious study of all the processes, with the usual quota of interesting results of the ardent beginner. If photography is, as I believe, an exact science, then there yet must be some channels of inspiration; for nothing short of genius could have



"THE GRACES." © ALICE WILLIS, ST. LOUIS, MO.

conceived some of her haphazard achievements. But, I don't think Dick ever laughed quite so hastily again at her after the day, when finding the rain water cask empty, she cheerfully washed her tank developed films in the salt water of the bay—and did them no harm! And, another time, disliking the details of a background about a figure she was printing, she did not look for a mask, but, holding the Velox paper on her palm under the ruby light, she swabbed the center with cotton dipped in developer until the figure came out in a broken vignette, so sketchily effective that she afterwards practised it variously. The Kodak supply shops grew prosperous on her orders, that headed every marketing list for town, and every person and thing on the estate was snapped by her; it is safe to say, that from Lopez, who drives the mules, to Rebecca in the kitchen, one and all had their chance to take "Miss Flo." But, it was the postman's picture of her that brought about the incident which I relate. As my contribution to her pastimes, I had taught Flo to knit, and with the vision before her of Red Cross donations, her little fingers acquired quick skill. For her heart was always on the battlefields. The war, that to us, as with many, is an unreality of the newspapers, this little girl visualized with every familiar name. She had vacationed with her class at Ostend and Blankenberghe when at school in Antwerp, and France meant to Flo happy summers roaming from Normandy to Provence.

"Oh, la! la!" she would sigh, "La pauvre Emilie's father dies of pneumonia gotten in the trenches. Ah, what poor soldier will wear my socks? I must knit faster—knit faster, ere he freezes" and clicking her needles she would start for the mail box with half a mile of gray yarn unrolling after



A VISION OF ARCADIA © ALICE W. LUIS ST. LOUIS, MO

her along the white coral-rock road. We made up a box together for the Red Cross, but the wonderful socks—which were not so very bad—Mademoiselle shipped to the French Secours herself. She did not put her name with them, as is permitted, but into one woolly toe she tucked the post-man's photograph of herself.

And before the next pair of socks was finished there came this letter: It is the end of my story. We will be glad to see her father home.

"Miss——

—At the Front. France—

"Dear Mademoiselle:

March fifth

"I hope this letter will find the person that I wish to address. I thank you for the beautiful warm socks that your little fingers have made for a soldier of France. We freeze and suffer out here, but we are fighting for France at last, as every Frenchman has wished to do since 1870. The wonderful boxes of comforts from America do so much good for us—ah! you cannot imagine, in your security and ease, what these offerings from the gentle hearts of women convey to men among the brutalities of war.

"When the socks were distributed I saw the little photograph, I begged my captain to give it to me that I might thank you. For, little mademoiselle, I know you. Do you know me? Miami, R. F. D. No. 7. Daily have I passed there and last winter there I saw you sitting several times. My brother and I are fruit growers of the Allapatah. We had become American citizens, but now we are Frenchmen again—until France has conquered her enemies and retaken the lost provinces. And then, mademoiselle, if I live to return to Miami, may I present my thanks in person?

"A. de V."

A CHARMING GROUP

A PHOTOGRAPH was sent in for criticism in our "Print Criticism Department," but it affords such an excellent object lesson in the eminent possession of just those qualities which constitute artistic grouping, that we think it deserves more consideration than could be accorded it in the special criticism pages of THE CAMERA.

It is entitled "Hallow'een Smiles," and is the work of S. O. Dunbar. Grouping is a constant law of nature. Indeed, inanimate Nature presents us with admirable examples of the grouping of clouds, rocks and trees. We see Nature's grouping, too, wherever there is a crowd of busy, or even idle people, if only a company of loiterers intently watching a workman driving rivets in a girder, or enjoying the conflagration of the nimble fakir in his demonstration of the marvellous virtues of a collar button. Have you never noticed how picturesquely the members of such assemblages dispose themselves all unconsciously? How well they carry out the law of unity in variety. The centre of attraction is the co-ordinating principle which brings them into harmonious relation, furnishing a picture full of action and animation. Nothing overdone, because nothing is done for effect. Now it is this perfect naturalness which

makes this picture of Hallow'een fun so charming. Each of the participants contributes unconsciously to the general effect of the whole. Each is there for a definite purpose, and would be missed if abstracted. In a word, the picture has action without any suggestion of intention to produce effect. The object of the group is singleness of purpose. It does not suggest that it has been concocted. The photographer has waited for the favorable moment, when every one of the group was completely divorced from himself or herself, and the result is a picture and not, as too often happens, a mere collection of individual portraits on one plate. This photograph also exemplifies another law of artistic grouping.

This law inculcates to avoid in a group of figures any arrangement in which the lines drawn connecting the different heads will form any regular geometric figure, such as a triangle, square, lozenge, or even a regular curve. All such arrangements are unpleasant to the eye just because they suggest these regular figures. No two heads in a group should be in the same vertical line. Now if you will refer to our picture, you will note that the principal group of a dozen or so figures is first nicely divided up into little irregular minor groups, but each of these is in co-ordination with the main group, and helps to interpret the motive. And secondly, the various heads in each group do not suggest the formation of square, triangle, etc., but a pleasing sinuous curved line, and the general line of all the heads is also pleasing by its irregularity.

We hardly believe that Mr. Dunbar deliberately studied this all out, but we do believe that his excellent artistic taste guided him in the general structure of this fine group.



"A CHARMING GROUP." S. O. DUNBAR, CLEVELAND, OHIO

BLISTERED BROMIDE PRINTS

H. W. HARMSWORTH

BLISTERS on bromide prints are annoyances which, at times, have to be contended with, even with the most careful manipulation. Some seasons and some makes of bromide paper are more productive of this evil than are others. Once I got hold of a packet of bromide paper which eventually proved the worst of any that I have ever handled for blistering, although in other respects it was admirable paper. Treat it in what way one would, blisters made their appearance at some stage before hanging up to dry. Moreover, several small blisters would finally merge into each other, and so produce blisters far too large to ever flatten out by contraction on drying.

Blistering is a subject on which a good deal has been written at various times, either for its prevention or erasement; but, so far as my own practical experience goes, the advice given in those articles proves futile in the case of large-size blisters. While trying the remedies suggested, and cogitating over the subject of blisters, finally I hit on the somewhat drastic expedient set forth below.

On reading the following description, to some it may perhaps appeal like so much wasting of time over a bad job; time which could be better spent in the production of a fresh print. This, no doubt, would be the simplest and best course to pursue in the case of small contact prints. When, however, it is a

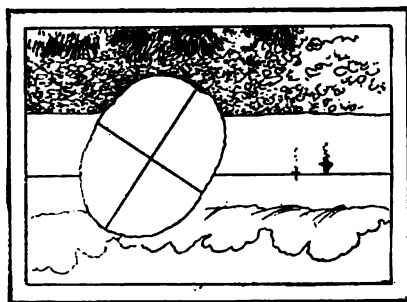


FIG. 1

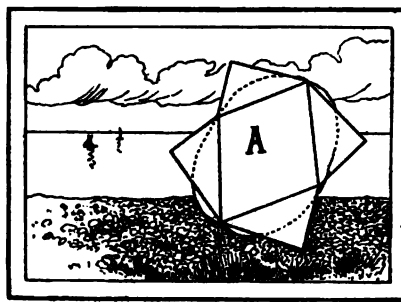


FIG. 2

good-sized enlargement, on which, it may be, a considerable amount of time and trouble has been already expended, the case is altered. Perhaps also it is the last sheet of paper in stock. Some means of saving what must otherwise be hopeless failures are therefore well worth trying.

The treatment, finally adopted, commenced with, first of all, mounting up an enlargement in my customary method and then placing it on one side to dry thoroughly. When this stage had been arrived at, the enlargement was placed on the work-bench, and the operation of flattening out all puckered

blisters commenced; puckering, of course, being clear proof of the blisters having expanded and become too large to ever contract sufficiently of their own accord to pass unnoticed. The blisters were flattened by taking a knife with a very keen edge—and for this purpose nothing answers better than an ordinary razor, which need not suffer from such usage if handled in the proper manner. With the knife a clean-cut cross was made right across each blister—of course through the film only—as shown on fig. 1.

Afterward, each blister was carefully turned outwards and over as shown on fig 2. A soft camel's-hair brush was then taken in hand, charged with sufficient but not an excess of paste. This brush of paste was carefully but well worked about underneath each blister on the paper base marked A on fig. 2. The four sections of each blister were then carefully turned over (one section at a time) down on to the pasted surface A, and lightly pressed into contact. After the four halves of each blister had been treated in this manner, a piece of glazed paper, such as used for packing sheets of bromide paper, was laid all over the face of the enlargement, and all the rubbing done which was necessary to press the blisters into close contact with the paper base A.

After placing on one side and allowing sufficient time for drying, the enlargement was placed on the work-bench, and a pointed knife with a keen edge taken in hand. With the knife any of the blisters' edges that required it were gently scraped down and made quite smooth and flush with the surface of the print. After having given the necessary attention in this direction with the knife, to complete the job a lead or crayon pencil was made use of for toning down any patches made too light by scraping with the knife.

Before quitting the subject, perhaps mention ought to be made that a blistered print which is eventually to be treated in the way described, should be handled with even greater care throughout the operations of washing and mounting it than would be absolutely necessary for one otherwise. The very simple reason for this being that a broken blister will not mend in the way described so neatly as one which is purposely cut with a sharp knife. Blisters can be increased considerably in size, besides being fairly easily broken, by injudicious handling in the process of mounting.

My customary method of mounting prints and enlargements, both blistered and otherwise, is to place the wet print or enlargement face downwards on a sheet of plain glass, and surface dry the back with a sheet of lintless blotting paper. Afterwards, to apply a thick coating of white starch paste over the back and well into the fibres of the paper base. Then to pick up the print or enlargement, as the case may be, and place it in the correct position on the mount. A sponge moistened with clean water is then taken and placed in the centre of the face of print. From the centre the sponge is lightly drawn out to the outer edge. This same course is repeated in the four directions of the print until the print is quite free from any imprisoned air bells, and lies in close contact with the mount. When circumstances allow of it, it is always best to dry a print and re-wet it before mounting, after it leaves the final wash water. *The Amateur Photographer and Photographic News.*

TO ROCK OR NOT TO ROCK

A CONTEMPORARY gives the following advice in regard to manipulation of the plate during development.

"Rocking the dish is important. If it is neglected, the negatives suffer from a defect known as mottling, a series of uneven patches appearing, especially in denser parts, such as the sky, instead of a uniform deposit. When it has occurred the negative is quite spoiled; there is no remedy short of almost impossible elaborate handwork. Hence, the necessity for care not to let the dish remain unmoved too long."

On general principles such a procedure may be recommended, but the fact must not be forgotten that the character of the negative is materially influenced by the mode of manipulation in development.

Of course, every one is aware there is a liability to stain the film incident upon repose in action of the developing agent and the fear of encountering this mishap inclines the photographer to keep the plate in constant movement. Yet, from careful observation of the difference in the results from violent and calm development, we think we are justified in saying the particular method cannot be ignored. Violent rocking is the general practice, and if the results do not seem to conform to the intentions of the worker, he has recourse to chemical means rather than to the safer and more effective mechanical.

In using precisely the same materials in the same proportions, with the same exposure, we may, therefore, get harmony and softness or the reverse. With a calm action of the chemicals, it is only natural to suppose that more detail will accrue than when the action is rapid. When the developer is applied to the exposed film, it will be noticed that the high-lights show up first, the half-tones following and so on in regular succession; the parts which have received least impact of light appearing last of all (the shadows, in other words). Wherever light has acted most, there the silver will be most readily deposited, and, hence, in an undertimed plate the high-lights acquire density before the less favored portions are brought out at all.

If the plate is kept still, there is a gradual deposition and the weaker parts of the plate get a chance to evolve at the expense of the favored portions.

The lights which are brought out first, having secured the precipitation upon themselves of the silver in immediate contact, find themselves in continued contact with a fresh supply, which in turn is precipitated upon the parts, which, in virtue of the greater action of the light, have the greater attraction for it. The lights thus go on rapidly aggregating the deposit of silver.

In the meanwhile, the minor lights, the detail in the shadows, suffer in two ways: First, they are robbed of the silver which should have helped to build them up, and in the next place, the high-lights quickly acquiring density, the development is stopped, of necessity, before the illuminated portions have had time for completion.

In conclusion, violent movement tends to intensify and slow action to getting the value and significance of the less illuminated parts.

THE DEVELOPMENT OF SNOW PHOTOGRAPHS

THERE is more local color in a snow scene than one not experienced in the taking of such pictures would imagine. Painters sometimes fail to appreciate this, and are apt to criticise an artist whose color preception is keen enough to see that the shadows cast are not altogether blue, and in addition there is an atmospheric haze in these shadows, occasioned by vapor from the melting snow in the cavities. The eye is also liable to deception from apparent contrasts of deep shadows and intense high-light.

While we grant there is a great liability on the part of the inexperienced to over exposures, we must caution against under exposure, which is worse than slightly over exposure upon such subjects. It is impossible to get the true rendering of the snow texture if the plate is undertimed, and the contrast is such as destroys all pictorial effect. The character of the illumination has very much to do with the beauty of the results. The angle of light makes or mars the picture. The picturesqueness is heightened when one mass of snow is properly relieved against the other masses. Low values are very effective in such pictures, but care must be taken not to get the subject flat.

But probably most snow pictures are ruined in the development. The development requires particular manipulation, and the nature of the subject must be taken into consideration, so that it is impossible to formulate a special method of development. How to preserve the texture of the snow and to keep the delicate gradations is the desideratum. The tendency is either in the direction of over-hardness or too great softness.

The best results seem to be had by the method of double development. For the first development, Metol and hydroquinone, 30 grains each in 20 ounces of water, to which 420 grains of sulphite is added and about 360 grains of sodium carbonate for stock developer. For development take about 2 ounces of this and add 4 ounces of water if the masses in the foreground are not particularly heavy. If the masses are heavy, dilute the developer further. I do not advocate the use of bromide at all for snow development. It has a tendency to cause hardness. Develop with this solution and examine to note if there is a tendency to flatness, remove to a stronger developer, one part stock solution and one part water and finish the development with it. On general principles it is well to use a dilute developer until the detail is well up in the shadows, and then either submit the plate to a stronger solution or locally strengthen parts needing strength. Be careful, however, not to make the negative too intense. A rather thin negative needing very careful printing is to be preferred. Local development may be effected by aid of a tuft of absorbent cotton soaked in strong developer.

Personally, I prefer an ordinary plate for snow exposures to an orthochromatic one, and have not had good success with double coated plates. If you use an orthochromatic plate do not employ any color screen.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.

FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription; in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

COMPETITION NO. 200

THE First Award is given to J. H. Field, for picture called "An Autumn Idyll." A sort of idyllic scene, possessed of novelty and interest by reason of the somewhat unusual lighting of the figures. This character of illumination is by no means an easy one to work with effectively, and credit for artistic taste is here due to the photographer for the manner in which the scheme of illumination has been carried out, and the way in which his subjects are brought into harmony with their surroundings. There is considerable action in the figures, and the contrast of light and shade in the drapery of the models is excellently managed so as to secure a nice range of light and shade from a high to a low key. The perspective of the photograph is also good, and the position of the figures in the scenery gives fine space relations.

The Second Award is given to Alice Willis, for the picture of "Girl With the Ruff." A well posed subject, showing a good eye and nice judgment for the value of lines in a picture. There is exhibited a series of pleasing curves throughout the photograph which is grateful to artistic vision, and at the same time contributory to action and movement in the figure itself. The variety of light and shade from black to white is highly commendable, and the values of the flesh are charmingly given. The background, to be sure, is in relation with the subject, but we wish it was a little more quiet.

Third Award to W. R. Bradford, for his picture, "Driving Snow." An outdoor winter view full of realism and highly suggestive of the subject represented. There is a good deal of action in the figures as they scurry along in the blinding snow, the character of which is well brought out. The architectural surroundings are well in accord with the subject.

First Honorable Mention to Clarence N. Smith, for "Twilight Haze." The low key in which this picture is taken is not only most suitable to such a subject, but also pleasing to the artistic eye for the nice scale of gradation of the minor values. The composition is also well managed, and the various parts brought into proper relation, so as to give a pleasing unity to the whole subject.

Second Honorable Mention to Wm. Ludlum, Jr., for "Through Veil of Snow." There are some good features in this picture, and not a little sentiment expressed in the motive, but it was bad management to introduce the dark conventional lamp and the natural, but rather unsightly, tree trunk right in the forefront to thrust their obnoxious presence upon our view. Their obtrusiveness acts like a jarring note.

BEGINNERS' COMPETITION, No. 2

QUITE a generous response was made to our call for contributions to the "Beginners' Competition," and we were agreeably surprised at the general excellency of the work presented.

The practical demonstration by means of examples of amateur work in the half-tone reproductions, and the means it affords to point out the particular merits of the photographs submitted to our critical editor, and also the defects and shortcomings which militate against pictorial effect, have, we feel, been instrumental in encouraging many to try their ability at picture-making by photography; the results being here exemplified in the characteristic good work now submitted to this competition.

The First Award is given to Ella R. Chase for the picture called, "Patience." This is good portraiture, and at the same time good legitimate photography. The illumination brings out properly the flesh character, and the gradation of light and shade is considerable. The values are also well preserved by keeping the light drapery in a higher key than the face.

The Second Award is given to Ed. J. Purcell, "Child Portrait." The original of this reproduction is a small photograph $1\frac{1}{2} \times 2$ inches, yet the work in the small picture is so excellent that it bears the amplification without detriment to its quality. The picture reminds us of a miniature painting. The pose and general attitude of the model is well managed, and the lighting effective in bringing out the characteristic features of the subject. The slight turn given to the body shows appreciation of the value of portrait perspective.

The Third Award goes to Harry A. Graham, "Mother and Babe." The subject is one requiring more care and study to make effective its presentation than a single figure. The incidents are more numerous and the disposal of them attended with more difficulty, therefore, the beginner in portraiture groups, and specially in a "Mother and Child" study has a problem presented to him not encountered in other work with the camera. But our photographer here has accounted for himself very creditably.

First Honorable Mention to E. S. Snider, "Position Please." We have here a group picture, and a group which by reason of the uniformity of the parts, presents particular difficulty. The recurrent heads of a score of little ones would task the skill of an experienced photographer to make effective pictorially, hence, credit is especially due to the maker of this picture, not only for the management of the models, but also for the method of illumination which brings out so well the individual expressions.

Second Honorable Mention to Chas. G. Smith, "Grace." Another portrait subject in which the good features are confined to the treatment of the face of the model. The lighting, though a trifle hard, is not unpleasant, and the expression is particularly good, but the pose might be improved upon, and the accessory better managed. The chair-back and also the mass of white of the dress conflict unpleasantly with the head and come too strongly and abruptly in contrast with the unnecessarily dark background.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1117. *J. Cross.*—"Mirror Lake." The view is too much extended. The uninteresting part to the right forming the major part of the view is quite unnecessary to interpret the subject, and as it adds nothing, like all incumbrances, detracts from the effect. The part we line off to the left is made thereby rather pleasing. Indeed, it would have been quite pictorial under better illumination so as to indicate better the quality of the water.



No. 1118. *Data.*—Conley, 5 x 7, long focus; anastigmat lens; $f/6.8$; April 1.45 P. M., dull light; $\frac{1}{2}$ second exposure; pyro tank developer; Cyko print.

1118. *P. W. Eddingfield.*—"Sisters." The photographic work is good. That is, the lighting brings out adequately both the flesh values and the drapery, but the posing is very poor. The models would lend their good qualities to the making of an artistic subject, and it is sheer injustice to them to stand them up in that unsympathetic way before the camera. No wonder they do not look pleasant. Pose

is as essential to portraiture as good lighting. The background is entirely too dense.



No. 1120. *Data.*—Premoette Special, $2\frac{1}{4} \times 3\frac{1}{4}$; Zeiss anastigmat lens; $f/8$; March 11 A. M., cloudy; 1-25 second exposure; M. Q. developer; Azo E hard print.

1119. *W. C. Dance.*—"Autumn Clouds." The view is entirely too extended towards the left, which portion about two-thirds of the subject is one stretch of monotonous shore, unrelieved by a single feature in any way attractive, and, therefore, detracts from the more interesting part at the right. If you will cover over the space beyond the line indicated, you must notice how bare it is, something which would not have attracted you as worthy the exposure.

1120. *Mrs. L. P. Van Woert.*—"A March Day." The subject is quite pleasing, and gives evidence of pictorial taste in the work-



No. 1122. *Data.*—3A Folding Pocket Kodak, rectilinear lens; U. S. 8; August 8 A. M., bright sunlight; 1-100 second exposure; M. Q. developer; Cyko print.

ing up of quite ordinary and commonplace elements to an artistic construction. The point of sight is well taken, and the selection so made as to get an oblique trend of the roadway, whereby the eye is made to advance directly into the view, thus giving the picture depth and perspective. The cloud effect is excellent. The sky has the right aerial perspective and properly recedes, thus suggesting atmosphere. The only suggestion we advance for improvement is in somewhat inadequate exposure. One-half second would have brought out the snow texture better, and have made the deep shadows luminous, and greatly enhanced the pictorial effect.



No. 1125. *Data*.—Premo, 4 x 5; Orthonon plate; 1-5 second exposure; Rytol developer; printed through glass on studio contrast Cyko.

1121. *W. C. Rabenhorst*.—"Study." The picture is badly spaced. It is cut off too much below, and suggests a position of instability in the sitter. Where an essential portion of a subject is left out, the spectator naturally inquires the reason for its exclusion, and when he notes that the omission produces an unpleasant effect, his enjoyment of the picture is much interfered with. Had you extended the photograph so as to bring in considerably more of the lower part of the chair, all this unpleasant effect would have been prevented.



No. 1127. *Data*.—Conley, 5 x 7; orthographic lens; f/8; July 3.30 P. M., bright sunlight; 1-100 second exposure; M. Q. developer; Azo soft glossy print.

1122. *Wm. Lussman*.—"The Road." The composition is rather pleasing and exhibits a good perspective. The distribution of the relative masses is well effected, but the view is extended too far to the right and is somewhat out of balance thereby. This portion, not being at all interesting, would benefit by its exclusion. The foreground is also too considerable in extent, and the out-of-focus part ought to be eliminated. We have marked the print as we feel it should be trimmed.

1123. *C. J. Liebel*.—"Warren." Interesting for local association, but nothing pictorially in it to warrant its taking. You might possibly have gotten something more approaching what is called a picture had you allowed the commonplace locomotive and train to draw out of the station so as to give the eye some chance to look up the road. Sometimes photographs akin to this are made interesting by the suggestion of action. You evidently had here some chance to do this, but everything is petrified and at an absolute standstill.



No. 1130. *Data*.—Century Grand, 4 x 5; B. & L. Protar lens; f/16; November 11 A. M., bright light; 1/2 second exposure; pyro developer; soft Instanto print.

1124. *W. H. Distelhurst*.—"Hiding." The topic is hardly indicated in the group you represent. It looks more like a number of folks assembled for the sole purpose of having you take their photographs. Each is independently interested personally in the results, and the young ladies who are holding up the tree are particularly so. The two children are behaving more naturally as children generally do, but none of the group suggest any idea of concealment. In a picture you must bear in mind that the spectator is taken into the artist's confidence. Here you ought to have the people trying to hide from him.

1125. *Jas. Stokley, Jr.*.—"Autumn Leaves." A very pleasing composition and very effectively illuminated. The figure is well placed and gives a suggestion of movement. The shadows of the trees across the road diagonally add much to the view, and the receding line of the houses gives a nice perspective. But in our estimation you have destroyed the value of the picture by the method of printing through glass. We appreciate softness in a picture, but softness all over produces monotony and destroys the variation of light and shade in the different plane.

1126. *Vereh Burtch*.—"The Boy and the Creek." There are too many spots in the photograph of about equal dimension and intensity. Note the boy himself, dark and silhouetted against the scene, the two masses



No. 1134. *Data*.—3A special; Zeiss-Kodak anastigmat lens; $f/16$; September 11 A. M., good light; 1 second exposure; Eastman tank developed; Velox special velvet print.

of black rocks or submerged roots and the intermediate stump of the tree. There is also but little range of light and shade in the view, and the distance approaches the foreground to the extent of making a flat presentation of the scene, indicating no atmosphere.

1127. *Frank L. Bey*.—"Regatta." An excellent piece of photographic technique, and also an interesting view. The peculiar subject in recording this incident of the boat race is not particularly pictorial, inasmuch, as the positions of the boats are such as to give a series of repeated lines of equal intensity directly in the forefront of the picture.

1128. *Walter A. McCuskey*.—"Brothers." The boys are good subjects, but you have not taken sufficient advantage of this to present them naturally and engaged in some business or mischief in which boys delight. Their entire get-up is picturesque and it is a pity that you missed your opportunity. The only motive suggested is, "Mister, take my picture." Try again and give us something more interesting. The photograph is rather good technically.

1129. *George Hooten*.—"Little Charlie's First Picture." The photograph is too hard



No. 1133. *Data*.—Cycle Poco, 4 x 5; R. R. lens; $f/11$; November 11 A. M., dark day; 20 seconds exposure; Artura Iris grade C print.

and contrasty. The flesh values are poorly presented, and by projecting the figures against such a light background you further intensify the hardness. Your light evidently was very strong. You should have softened it by interposing a thin muslin screen with an exposure of at least one-half second and a mild development, that is, a diluted developer.

1130. *Ford E. Samuel*.—"Court of Italian Building, Panama Exposition." A fine piece of architectural rendering, taken from a very effective point of view so as to exhibit the best features of the structure. The management of the light is excellent, bringing out textural values, properly presenting perspective and conferring a beautiful range of light and shade. An excellent technical photograph, and at the same time a pleasing study in architecture.

natural and not really in conformity with the expression of true impressionism. The foreground is also monotonous, being a mere blank unrelieved by a single incident, or even with a diversity of light and shade. This uniformity in the treatment of the three planes of the picture deprive it of depth and atmosphere, and the projection of the dark mass of foliage against the sky gives the whole an unpleasant shut-in effect. The view indicates the presence of elements which might have been effectively associated in the making of a good composition, but the conformity to the dictates of the cult evidently over-influenced the natural good taste of the photographer.

1133. *Chas. D. Meservey*.—"Thrift." A well conceived genre subject, possessed of interest and suggestive of action. The various parts of the picture are well distributed and



No. 1139. *Data*.—No. 9 Seneca, 5 x 7; Vinco lens; f/8; 4 P. M., bright light; 4 seconds exposure; pyro developer; Argo linen normal print.

1131. *Chas. J. Smith*.—"Midway Bridge." This is what might be called a cast iron photograph. The objects in it look as if they had been snipped out of sheet metal. The light was harsh and intense when you made the exposure. What else could you expect so near the middle of the day when shadows are vertical? This not being bad enough, you developed your negative to the limit of intensity. Learn that only the most experienced workers attempt landscape at such time of day. A novice is sure to fail.

1132. *R. Dickinson*.—"White's Meadow." The diffusion is too uniform. All the planes are of equal intensity and the effect is un-

the accessories nicely managed. The foggy effect, though detracting photographically, rather adds interest to the picture and gives well the suggestion of eventide.

1134. *L. C. Brodribb*.—"Box Canyon." An excellent photograph, presenting admirably the texture value of rock structure and giving a very adequate idea of the scene. The upright view represents the subject with appropriate dignity much more adequately than a horizontal projection. The technical quality is fine.

1135. *H. A. Dahl*.—"Dwelling." You simply ask for information how to improve the photograph. We shall have to give you the

advice Hamlet gives the players, "O! improve it altogether!" The subject itself is not attractive either for possession of any artistic quality nor even for pleasing architectural features. The building has no symmetrical lines or pleasing lights and shadows. But, perhaps you know this without our telling and were constrained to make the photograph since you ask our advice as regards improving it. First, the illumination is poor. You should have waited until one side of the building was in shadow so as to get some relief and projection. The light it is in makes a flat, monotonous image and kills all atmospheric effect by projecting the house dead flat against the sky, and this flatness is further intensified by having the house of the same degree of intensity as the foreground. There are only three shades in the photograph, white, brown and dark brown—no gradations. Then you should have had your camera placed at a higher elevation, and this would have prevented the house from appearing to fall back. You should also have taken a more angular view of the house. It would have enabled you to elevate your camera and have



No. 1142. *Data*.—No. 9 Seneca, 5 x 7; anastigmat lens; $f/8$; September 3 p. m., very dark; $\frac{1}{2}$ second exposure; pyro developer; Velox print.

gotten rid of the little garage, which suggests a miniature of the building. The barn side looks more picturesque. Your photographic work, however, is very good.

1136. *F. Du Pree*.—"Gertrude." The illumination is entirely too flat, relief being entirely destroyed, and no distinction whatever made between the texture of the flesh and the draperies. The background seems plastered against the head, not the slightest indication of atmosphere about the model. The horizontal arm of the chair cuts the body unpleasantly, and the figure is placed so low that it looks as if it might slide off at the bottom of the photograph. You will notice that the ceiling appears extraordinary high.

1137. *E. Williamson*.—"Yakima Rapids." An excellent rendition of moving water. The textural quality of the mobile fluid is adequately presented. It shows at once that it is a reproduction of water and water quality. It is water in action too, not petrification. We follow its progress and note its dash and swerve where it meets with obstruction to its rapid flow. The management of the shore lines is also good. The masses are well balanced, the smaller mass having the greater interest, as it always should have in good composition. The point of sight is well



No. 1137. *Data*.—3A Kodak Special; Kodak anastigmat lens; $f/8$; July 5.30 A. M., bright light; 1-50 second exposure; metol-pyro developer; Platona print.

chosen, and the lines, both of the cliff and shore, graceful and pleasing, particularly where the cliff breaks against the sky. There is also delicate sky gradation, the lightest portion at the horizon and a gradual blend to the upper portion, which gives nice aerial perspective and suggestion of atmosphere—an example of excellent pictorial effect without the least faking in the photography.

1138. *W. M. Tompkins*.—"Little Lane On the Hill." The foreground of the picture is too much extended. A background occupying so extensive a part of the subject should have some particular feature or features of attractive character, but when, as here, there is only a monotonous sweep, the rest of the view suffers by its usurping too much space.

to demand this in an actual camera view, but it is just what a painter would have done in dealing with such a subject. If the group of tree and house had not been made the initial feature of the picture, that is, given in such proportions, but merely made to form an item in a more extended view comprising more of the landscape, and you had removed your camera further off, the effect would have been delightful and your view a most pleasing picture. We commend you for your excellent photographic work, and also for your appreciation of the worth of a soft and delicate illumination.

1140. *A. Konock*.—"November Clouds." The clouds are entirely too weighty for the landscape, and the landscape is too uniform



No. 1145. *Data*.—No. 1 Premo, 4 x 5; rapid rectilinear lens; U. S. 16; August 5 P. M., clear; 1 second exposure; Nepera developer; Azo E hard print.

You will notice that if you shorten it, excluding the very uninteresting tombstone or piece of flagging, the view is much improved thereby.

1139. *W. H. Schannel*.—"Study." You have here two subjects each of which is particularly interesting and individually picturesque, the gnarled old tree and the quaint house, but the combination as presented is not agreeable on account of the unpleasant association of the lines of composition. Had the house been further off from the tree it would have been shown of less dimensions, and so have given proper perspective to the view and have prevented the confusion of lines and masses. Of course it is preposterous

and monotonous. The houses are not picturesque and the repetition of the same forms at almost equal interval is very unpleasant to the eye. There is no relief of one part of the landscape with the other parts. The distance is exactly of the same intensity as the immediate foreground, and so there is no perspective in the view.

1141. *Ethan A. Alley*.—"Autumn Calm." There is no attempt at composition, no distribution of the various parts to make anything of collective interest. The illumination is entirely too flat and uniform. No gradations of light and shade, and besides the point of view is badly chosen; this, together with the nature of the illumination, prevents

the reflections from showing properly. Water does not look that way in nature. You may retort that it is a copy of nature, but our reply is, you can falsify nature with the camera just as you can with the brush. The proper rendition of water effects by photography demands much care and study, and you cannot expect a true transcript of its character simply by pointing the camera at it. Read some of the papers on photographing water published in *THE CAMERA* last year.

1142. *John W. Robinson*.—"Louise." Your model looks like a very capable subject and one who would repay a photographer who had some idea of pictorial composition. This photograph shows a total disregard of all art principles and a want of skill in negative making. Why did you develop to such intensity? Your result is harsh and unpleasing and most contrasty in effect. The pose is very bad, and if the good model did not show by her expression that the occasion was not a serious affair, we might divine that a squad of soldiers were waiting the signal to fire upon the unfortunate one for breach of military discipline.

1143. *H. L. Wents*.—"Sunset On Ohio River." A very effective sky prospect, and showing admirably the aerial perspective. It calls to mind a painting by Ghirtin. The variety in the dark masses is fine, and their distribution well considered. The architec-



No. 1147. *Data*.—Century, 4 x 5; R. R. lens; f8; November 9 A. M., 1 second exposure; Agfa Rodinol; Cyko normal print.



No. 1149. *Data*.—1A Kodak, Junior; R. R. lens; U. S. 8; December 12.30 P. M., bright light; 1-50 second exposure; M. Q. developer; Azo print.

tural subjects are well taken. The Woolworth Building, however, would have looked better had one side been cast in shadow. The uniform lighting destroys all suggestion of relief which such a subject demands.

1144. *W. M. Tomkins*.—"A November Morning." The tree is the most pleasing element in the photograph. The trunk and branches lend their aid to pictorial effect. We regret that the rest of the view falls off artistically. The right side is too indistinct and blurred, and the graceful bend of the road is too much obscured. If the obscuration were according to nature it would add to the effect, but, as it is not, it only detracts therefrom.

1145. *C. M. Stebb*.—"Happy Days." The figures are natural and pleasing, the surroundings are rather annoying, however, and too definitely brought out, and in this way attract too much interest. The vacant portion of the bench causes the picture to be out of balance. This could have been avoided by selecting a vertical view rather than the long horizontal. You will note the improvement in the picture simply by the exclusion of the



No. 1151. *Data.*—3½ x 5½ camera; R. R. lens; f8; June 11 A. M., bright light; 1-25 second exposure; Eastman special developer; Cyko normal glossy print.

objectionable settings effected by the lines indicated.

1146. *J. Ziegelbauer.*—"Rock Run." The fall, no doubt, presents to the eye a very striking and beautiful subject with the translucent effect of the color of the water, but in the photograph we miss this, the essential feature, and get only a single phase of the dashing and foaming run, suggesting an arrest of movement and giving the idea more of a petrification. We think the effect might have been better with a further off view and with the camera at a higher elevation.

1147. *Kenneth Luther.*—"My Brother." The lighting of the face is too flat and uniform. It is entirely devoid of shadow. The face should have been turned a little to the side and one portion of it cast into shadow, which would have given some relief to the head and not have made it appear as if joined to the background.

1148. *Walter O. Stevens.*—"Arched Bridge." The subject as presented does not strike us as possessed of any particular pictorial worth. This straightforward view hardly does justice to it, however, and that may be the cause of its not pleasing us. Perhaps, a more oblique view would produce a better effect. Do not place your camera so squarely in front.

Point it a little from the left and it will give more of the road under the arch.

1149. *Geo. Heisler.*—"Young America." A very good group in which the participants are acting naturally, and the consequence is that the expressions are good. The photographic quality is also excellent.

1150. *R. A. Berneau.*—"Stanley Park." The part of the subject possessing interest is confined to the right. All the major portion to the left is too dark and so devoid of detail as not only to be useless to the view, but detrimental to the better part. The time of day at which you made the exposure is the principal cause for the poor illumination. The shadows are a mere mass, unrelieved, and the high-lights harsh. It is next to impossible to get a subject like this, which one might call pictorial, at a period of the day so near the meridian.

1151. *Hans Einarson.*—"The Winding Brook." The most attractive feature is in the pleasing line of the brook. It leads the eye right into the view. The general effect, however, would have been better had you placed your camera at a lower level. A



No. 1153. *Data.*—1A Kodak, Junior; R. R. lens; f8; July 10 A. M., fair light; 1-25 second exposure; M. Q. developer; Velox print.

painter would have sketched the picture in a seated posture. Your elevation was much above this, and the eye looks down upon it rather than into it.

1152. *John W. Beatty*.—"Along the Santa Fé." A good panoramic view, and well done considering the circumstances under which it was taken, but panoramas are seldom good subjects artistically considered, particularly in a small size like this. The parts appear too diminished. The illumination here is too uniform, all the parts of the picture are of the same intensity. There is no relief of one part against another, and so we really do not get the suggestion of the great distance represented.

1153. *John F. Hunderlack*.—"Glacier Station, B. C." A rather good composition, exhibiting adequately the principal feature of the view, but it would have been more effective had the contrast been less. The dark foliage of the foreground, unrelieved by any middle distance, breaks too abruptly against the mountain, and we have no suggestion of atmosphere. We are inclined to think that considerable longer exposure, say a couple of seconds, and care in development of the plate, not to get such intensity, would have presented the subject better.



No. 1154. *Data*.—Conley, $3\frac{1}{4} \times 5\frac{1}{4}$; Vitar lens; $f/32$; November 2.00 P. M., bright light; 1-10 second exposure; metol developer; Velox print.

1154. *C. R. Davis*.—"On the Kalamazoo." The composition is rather pleasing, but the illumination is too flat. The picture has one uniform tone, and so gives us no idea of depth or receding of one part from the other. The further shore is of the same intensity as the immediate foreground, and this foreground is rather bald and uninteresting. It needs a small clump of shrubbery, or a boulder, or a figure or something of the kind to relieve it.

1155. *John A. Coleman*.—"The Drug Store." Insufficient data is given and no information as to the character of the plate used, which is of importance to us in our criticism. Judging by the results, we would say the proper plate or film was not employed. The subject demands a double coated or non-halation plate, as it is so full of reflected lights which are so evident in your view.

FOURTH ANNUAL CONVENTION PHOTOGRAPHIC DEALERS' ASSO- CIATION OF AMERICA, AT CLEVELAND, MARCH 7, 8, 9, 1916

Dealers in and manufacturers of photographic supplies should get together every year, as do dealers in all other industries. There are many experiences coming up daily that require a broad discussion; dealers following the same methods continually without adopting the new ideas cannot secure the best returns possible from their business.

Never have the dealers had a better opportunity for getting together and interchanging ideas than that offered in the coming Cleveland Convention, because Cleveland is centrally located within a night's ride of the Atlantic and the Mississippi.

The Second Exposition of Photographic Arts and Materials will be held in Cleveland the same week as the Dealers' Convention. This Exposition will be the largest and most complete in every way ever held, and will include many new things of special interest to the dealers.

There will be no dragging hours at this Convention. The arrangements of the Executive and Local Committees are such that every moment will be filled with profitable, as well as pleasurable experiences.

The meetings of the Association will be held in the Hotel Statler, the mornings of March 7th, 8th and 9th, from 9 to 12 o'clock, at which time many interesting papers will be read, important reports made of conditions throughout the country, best methods for successfully conducting the photographic supply business explained, and discussions had on many subjects of great interest to dealers, making in all a most valuable three-day Convention.

After each morning's session luncheon for *members only* will be served at the Hotel Statler in a private dining-room. At this time a speaker, well-known in the trade, will give an address.

Every member will be furnished with a button and a ribbon badge, bearing his name and city, so all will know each other wherever they meet during the week.

Afternoons will be devoted to the exhibits at the Exposition, meeting the manufacturers and their representatives. Wednesday evening there will be a theatre party for members and ladies. Thursday evening the annual banquet will be held followed by dancing (informal).

There will be no extras at this Convention, as the active membership fee of \$5.00 includes all of the above. If desired, extra tickets will be furnished dealers for their wives and representatives for the luncheons, theatre party, the banquet and the ball at the actual cost.

To be an active member of the Photographic Dealers' Association of America costs but \$5.00 a year. This includes taking

part in all meetings of the Association, the luncheons each day of the Convention, theatre party ticket, and ticket to banquet and dance, together with admission to the Exposition at all times.

Members of the Photographic Dealers' Association receive the benefit of the experience of other men who attend the Convention, have the opportunity of mingling with others of their craft, get better acquainted, obtain new ideas, and are given an opportunity to take an active part in planning for business advancement, better methods and more profit.

No live dealer of photographic goods can really afford to miss this Convention and Exposition. Its inexhaustible fund of money-making ideas will be of a great value to YOU AND YOUR BUSINESS THROUGHOUT THE YEAR.

Send in your \$5.00 now to the Photographic Dealers' Association, 241 Engineers Building, Cleveland, Ohio.

PRIZE OF \$25.00 IN GOLD

The officers offer the above for the best window display made during the months of January or February. If possible, dealers should send lantern slide of their window (colored if desired). If this cannot be done, send photograph with 35 cents in stamps, and the slide will be made in Cleveland for you. Slides from these window exhibits will be thrown on the screen and the dealers will vote who should receive the prize as offered above.

Mail all pictures or slides direct to H. M. Fowler, President, Photographic Dealers' Association of America, 806 Huron Road, Cleveland, Ohio.

These pictures or slides must reach Cleveland not later than March 1st, 1916.

NEW SCHEMES FOR PHOTOGRAPHING WRECKS AND SCENES BENEATH THE SEA

Some time ago there was developed a special submerging bell made of heavy steel and of sufficient size to accommodate a powerful searchlight, together with a motion picture camera and also the operator, so that moving pictures of the beds of rivers, coral formations, wrecks, etc., might be taken. Instead of going to such expense and trouble, there is suggested a much simpler method which would seem just as effective.

In this arrangement there is provided a set of our steel cables properly rigged with winding drums, etc., on a float or raft, and at the end of these cables is secured a motion picture camera, electrically controlled by means of insulated wires leading down one of the cables and secured thereto. In the top of the camera is mounted a powerful electric lamp with lens, etc.

The operator on the surface is enabled to view the wreck or other submarine scenes through a periscopic tube, more properly known as a "mariscope." The sighting tube

may be turned in any direction and, of course, the camera may be raised and lowered to any depth or height in the water desired.

The cables are wound up over the drums on the float or raft, and to enable this function to be performed properly the mariscope or sighting tube is made in the same fashion as a telescope, i. e., of gradually decreasing sizes of tubes sliding one within the other.

A substantial water-tight camera and high candlepower lamp are necessary for this purpose; the machine could be constructed of steel and provided with a properly fitted door for permitting a new film to be readily inserted and the old film removed when the device is above water. A storage battery or dynamo on the float will supply current for the lamp and camera, and pictures can be taken in this way either in the daytime or at night.—*Electrical Experimenter*.

THE STRIPPING OF GELATINE DRY PLATES

S. M. FURNALD

The following method is recommended:

A solution is made as follows:

4 per cent sodium fluoride 2 parts
Formaline (40 per cent formaldehyde)..... 1 part

The portion of film to be stripped is first cut around with a knife. The solution of fluoride and formaline may be flowed over the plate or applied with a camels'-hair brush to the portion of film to be stripped. The film will become loosened from the glass in about one minute, and may then be easily lifted by applying over it a piece of dampened paper, lifting carefully one corner and stripping the paper and film away together.

If reversal of the film is required, it is easily transferred to a second piece of paper and from that to the final support.

The glass on which the film is to be laid should be perfectly clean and flowed with a 5 per cent solution of gum arabic. A little glycerine added to the gum solution tends to improve the condition of the stripped film, which otherwise becomes rather over-dry and horny, owing to the formaline.

With small portions of film there is very little danger of distortion or tearing, but if the plate is first bathed for ten minutes in formaline before applying the stripping solution, the film will strip equally well and is tougher and less liable to distortion.

When stripping large films the plate may first be flowed with

Collodion..... 30 c.c.
Glycerine..... 2 c.c.

and, so soon as the collodion film has become set, flowed or immersed in the fluoride and formaline solution; the time required for loosening the film may be slightly longer, but this method gives a tough, rubbery film, considerably stronger than film stripped without the collodion coating.—*From the Research Laboratory, Eastman Kodak Company*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

What is the attitude of your park authorities in regard to the taking of motion picture scenes? They may permit you to use a Kodak as freely as you wish, yet impose certain restrictions when a motion picture camera is used.

The Brooklyn Park Department, for instance, classifies motion pictures as commercial products and now charges tolls. If a film company or individual causes a troupe of not more than ten players to work in any of the parks of the city of churches, the fee is five dollars.

If, however, heavy "props" or artificial scenery is employed, or the company is more than ten and not over twenty-five, ten dollars is charged. Each horse used is rated at one dollar.

It is not realized by those responsible for the control of our parks that harm is done when they place obstacles in the way of cinematographers, for their efforts are generally shown the country over, and the "atmosphere" they introduce acts as a boost for the place where they took the scenes.

An instance of this occurred in New Orleans recently. The Fox Film Corporation applied for permission to take several scenes in the City Park, but were refused by the City Park Board. The matter was taken up by the New Orleans Association of Commerce, who feared that this petty action would prevent New Orleans from becoming a film producing center. The City Park Board, however, had the good sense to realize its mistake.

The weapons used in war films are harmless, so a mounted policeman made a fool of himself when he arrested a troupe of cowboys and soldiers who were fighting in Van Courtlandt Park, New York City. He took them to the Morrisania Court, where he charged them with carrying weapons as opposed to the Sullivan law.

The magistrate discovered that the guns were not loaded and dismissed the players when matters were explained. The company in question now obtains a permit from the police department, when any of their players have occasion to carry firearms in public.

For these reasons I would advise you to make inquiries before exposing film in public parks.

Leah Baird bubbles over with fun when off the film, but there are times when she can be serious. This is not only when she plays

emotional parts, her favorite kind, for I managed to catch her between scenes at the Vitagraph Brooklyn studio.

"Yes," she said, "our lives are full of uncertainties, and I realize this more, being engaged in motion picture work. I hate to think of it, but if anything should happen to one of us leading players, the effect would be felt in more ways than one.

"We cannot double, like our theatrical brothers and sisters, and a photoplay is completed but once, while a stage play is produced night after night—that's the difference.

"Once a photoplay has been put on, the leads have to be on the job until it has been completed. This was forced home to me in "Tried for His Own Murder." A beautiful Scotch collie that I have had since he was a pup, played with me in this picture, but after we had half finished it, my pet died. It was fortunate that we had taken all the mountain scenes, but as you may think me unkind not to take the dog to the city with me, you will know the reason why."

I have been favored with a copy of "The Photodrama," a little book written by William Morgan Hannon, scenario editor of the Nola Film Company. Mr. Hannon sifts out the individual qualities possessed by the newest of dramatic arts and analyzes them. There is a good deal of truth in this statement: "The photodrama does not seem to lend itself readily to the development of the idealistic and subjective in art. Its great field, unquestionably, is objective realism, though it also handles romantic themes in great fashion."

On another page, Mr. Hannon aptly defines the qualities a director should possess: "A director of photodramas is constantly required to exercise a knowledge of the principles of painting, sculpture, architecture, interior decorating and landscape gardening."

Just what essays on "Weighing Wilson" and "Advice to a Young Lawyer" are doing in such a book, I fail to understand. The book is most tastefully bound and printed on hand-made paper, and is published by the Ruskin Press of New Orleans. It is a worthy addition to the motion picture photographer's library.

David Horsley's latest contribution to the improvement of motion pictures is the "Axetitle," which abolishes, insofar as his own productions are concerned, supplementary sub-titles. If a player says "I hate

you," you not only see him utter the words, but at the precise moment the words appear at the top of the same scene. This, to my mind, makes a dramatic situation more intense.

I have always maintained that few motion picture companies will turn down an unusual subject, and now I have proof that the free lance cinematographer can create a novel subject by experimenting in some connection and get away with it. The subject, of course, must be one of widespread interest to begin with.

What causes me to make these remarks, is the fact that the Universal Company recently put out a three-reel production, entitled, "The Nature Man." Joe Knowles, who has been in turn an artist, lecturer and naturalist, left civilization in October, 1913, in order to prove to the world that a man could live unaided in the wilderness. Mr. Knowles' experiment was so successful that he decided to repeat it again, but not before he entered in negotiations with the Universal people to film his experiences. The result is a picture of unique interest.

We all like to know the beginnings of successful concerns, so I cannot do better than give a brief account of history of the Vitagraph Company as a start-off. It was three public entertainers, in 1897, who realized the possibilities offered in the motion picture industry. These three men were Albert Smith, J. Stuart Blackton and William Rock.

Their first picture was only forty-three feet in length, but even this was in excess of the amount allowed to one subject in those days. Everybody prophesied failure, but the pioneers stuck to their guns, and in 1900, were in a position to incorporate their company. They gradually increased their output, until today we find them turning out from twelve to sixteen negative reels weekly. Their two stock companies, one in Brooklyn and the other in Los Angeles, comprise more than two hundred members.

Film portraiture is sufficiently rare to warrant mention. S. H. Lifshy, a Brooklyn photographer, who has rather a select clientele, realizes that a motion picture possesses a permanent value. To this end he makes a specialty of filming children in action, and brings out their pleasing characteristics. Mr. Lifshy also shows them at play with their pets and their favorite pastimes. Children are born photoplay actors, consequently they require comparatively little coaching.

I am convinced that every photographer with a high-class trade can add this latest branch with profit and prestige to himself.

Detectives are now finding a strong rival in the cinematograph. Not so long ago a youth gained injuries in a street car accident, and his relatives sued for \$40,000 damages on the ground that it resulted in the young man being paralyzed.

However, the lawyer, acting on behalf of

the corporation, had his suspicions and did a bit of detective work on his own account.

When the case was brought on, he produced a series of films as evidence. These revealed the youth in question winning a walking race and boxing match at the local sports grounds after the accident occurred. Needless to say, the young man lost the day.

A Russian peasant and his wife paid their first visit to a picture theater, when to their mingled amazement and surprise, they recognized their long-lost daughter in one of the pictures. The woman fainted and her husband hastened to get behind the screen, fully expecting to find his now grown-up girl. Before he could be convinced of his mistaken illusion, the exhibitor had to have the curtain taken down. Then the peasants were put in touch with the film producing company, and, like on the films, there was a happy reunion.

In England, recently, when one part of the country was in the throes of labor riots, a film company despatched operators to record the happenings. The films of this notable event were shown at the local motion picture theaters a few days later, and in the audience were some of the rioters themselves, who gloated in showing their friends the destruction to property they had done. Little did they think, however, that the protectors of the law would have had the foresight to see the condemning motion pictures on the day after. They had no evidence against the ringleaders previously, but they were soon able to pick them out through the films' aid, and their arrests came as a surprise to them.—*Paramount Progress.*

The story of the rise of the house of Pathé reads like a romance.

Twenty years ago it was founded by four brothers who each contributed 2,300 francs—less than \$500 for each. After three weeks two of them withdrew.

Today Emile and Charles Pathé, the two who remained, are drawing \$100,000 apiece in salaries, besides their profits.

Charles Pathé began in a small store with two of those primitive machines where one was privileged by depositing a coin to see a succession of tiny photos tumbling over one another, and giving the effect of life action.

Not long after, he purchased twenty machines, placed them in twenty different towns and switched his pictures in weekly rotation.

From the profits he secured Lumière's motion picture camera, then just completed, and began to take his own pictures ten or fifteen feet at a time. His wife feeding chickens, a railroad train entering a station, a man running—these were his early subjects. Gradually his films lengthened and his markets increased until they covered much of Europe.

Then the idea came to him that a story could be worked out on the screen. He hired Max Linder to work in comedies, and Louis J. Gasnier, a Parisian play producer, to direct

these pictures. Here was born the photoplay of today. Mr. Gasnier is now vice-president and general manager of the Pathe in America.

Pathé's one-room factory of twenty years ago is represented in 1916 by a \$3,000,000 factory in Joinville, France, with sisters in Montreuil and other places, by others in England and the United States; the open air platform where the first picture plays were staged was the ancestor of the great modern studios in France, America, England and India; the selling force of one man is represented by scores of offices and exchanges in all parts of the world, with nearly forty in the United States alone; the Pathé news film has a lusty family in the Pathé News in the United States, the Pathé Gazette in Great Britain, the Pathé Journal in France, the Pathé Giornale in Italy, and another in Russia.

To secure the rain-soaked effect of the country road running through the Whitecaps settlement in "The Gentleman from Indiana," the new Pallas Picture starring Dustin Farnum, Director Frank Lloyd had to use over 14,000 gallons of water, and every gallon had to be hauled by auto trucks from a well three miles away. The fleet of trucks used that day resembled the mobilization of some European army under orders to reach the frontier by morning. Producing mud and pools of water in a California desert under an able-bodied California sun in September, the hottest of all California months, has ceased to be one of Frank Lloyd's favorite occupations.

Mrs. Celie G. Turner, whose stage name is Celie Ellis, brought an action before the Supreme Court in New York, against the Crystal Film Company, for a broken ankle, sustained by her while depicting a scene in which she fell from a limb of a tree to a projecting roof and on to the ground below.

Attorney for Miss Ellis contended that his client's average earnings were \$5,000 a year and that she was entitled to \$15,000 for damages sustained. The jury, after short deliberation, brought in a verdict of \$4,000 for the plaintiff.

The interesting feature in this action lies in the fact that the attorney for the plaintiff, immediately on the release of the film, secured it and had it produced on the screen in a moving picture theater before witnesses, and thus proved to them it was Miss Ellis, and then introduced in evidence the entire section of the film, showing the actual fall from the beginning to end.

In a recent raid on London by a Zeppelin fleet, the Gayety Theatre suffered a disaster which indicates the dangers to which theatregoers there are subjected nightly. The call-boy had just sung out his "fifteen minutes" when a terrific explosion occurred which completely demolished part of the building. James Blakely, the comedian in "Tonight's the Night," which was appearing at the Gayety

Theatre at the time, was talking with the boy who was smashed into a pulp. A pandemonium prevailed, and many, including Mr. Blakely, were carried out of the building unconscious. The shock prostrated the comedian, and in two weeks he died from a nervous breakdown.

The above information is obtained through a letter received by Hattie Williams, the Oliver Morosco new motion picture star, from her brother, John D. Williams. Miss Williams, who is well known as a star of the speaking stage, is about to appear on the screen in Paramount Pictures.

The excellence of the Creator's work is officially established, as evidenced by the following from a motion picture screen:

"As God Made It."

"Approved by the Ohio State Board of Censors."—*Boston Herald*.

It is somewhat surprising to read in the Federal reports that the moving picture industry stands fifth among American industries in the amount of money invested and the number of persons employed. While we have recognized the vast development of this phase of amusement in a brief time, few of us have realized its magnitude throughout the country. The movies are not a fad; they are on a sounder basis today than ever, and form a striking demonstration of what new resources can be added to a nation's assets by scientific ingenuity and intelligent commercial development.

Motion pictures as a part of the education of the banker is the latest use to which the silent drama is being put. Following the trend of intense interest that has been manifest in the rapid growth of the instructive motion picture, the National City Bank in New York City, through its president, has contracted with Paramount Pictures Corporation to show the South American travel series four days each week for the purpose of better acquainting the members of the bank's educational department with the exceptional facts of interest regarding Latin America, preparatory to their taking up their future work in that country.

Silhouette photography is now employed in making motion pictures, and they are meeting with big success. Several prominent stories from the "Arabian Nights" have been taken for the first scenarios.

That the photoplay camera man may eventually be done away with is the opinion of those who have seen J. Gordon Edwards' automatic photoplay camera, an invention to which Mr. Edwards has been devoting much time when not engaged in directing William Fox photoplays. Mr. Edwards believes that he is amply protected on the invention, and hence feels no hesitancy about discussing it.

The device consists of a small motor attachment for the ordinary motion picture camera. It can be regulated to "grind" at any desired speed and can be instantly adjusted for varying degrees of light. In studio

work it can be connected with any electric plug and in "location" work it can be operated by batteries or by a series of springs.

It is intended to be used by the director himself, who may start or stop the camera mechanism by the mere pressure of a push button. The button is at the end of a length of fine wire sufficiently long to permit the director to operate the camera while at a distance from it.

Thomas H. Ince, President, and eight employees of a motion picture camp located a few miles north of Santa Monica, Cal., were severely burned January 12th, during a fire that damaged several buildings of the camp. The fire started in the film cutting room and spread rapidly. The men escaped down a blazing stairs. They were brought to a local hospital for treatment. The loss was estimated at \$80,000.

Many of our readers have, no doubt, wondered how the animated cartoons are made. In a recent interview in the *Paramount Press*, J. R. Bray, the inventor and patentee, describes the process:

"The possibilities of the moving drawing," he said when seen, "are unlimited. They are dependent only upon the imagination of the artist.

"At the present time we have a staff of six cartoonists, twenty assistant artists and four cameramen constantly at work. An idea of the amount of labor entailed may be gained from the knowledge that there are thirty-four different processes to be undergone by each cartoon, and that there are from three thousand to four thousand cartoons in each thousand feet of completed film. Hence a week's output involves from 102,000 to 136,000 processes."

The accomplishment of this tremendous task is made possible only by a special method which Mr. Bray has invented and patented. As a result of his invention, the work of preparing thousands of pictures is cut in half. When he has decided upon the desired scene for the antics of "Heeza Liar," he first makes a background on a sheet of heavy paper, which background is then printed on many sheets of tracing paper. This done, it is necessary for the artist only to draw the parts which are to appear in motion on the screen. The result is evident. The background remains absolutely stationary throughout the scene, so that the work of the artist is reduced to a minimum. If a man is to be represented as standing still for any length of time, he is printed on the sheets. He does not have to be drawn again until he is supposed to move.

"This permanent background may be easily erased or drawn over," Mr. Bray continued. "What is more, a large number of copies are printed with portions of the background omitted. This obviates the necessity of erasing to a great extent.

"In order that movement may be both steady and continuous on the screen, great care must be taken in the drawing of the car-

toons, a task greatly simplified by our use of tracing paper. The artist merely places a piece of paper upon the last drawing, so that the position last taken by the figures shows clearly through the paper. Thus he is able to draw in the next position carefully and easily."

Mr. Bray supervises personally every stage of the work. He originates the plot and makes from six to a dozen sketches of the vital points of the story. Then the detail work commences. While the cartoonists do most of the sketching, Mr. Bray draws practically every movement. If a man, for instance, who has been motionless for some time, is required to raise his arm, the staff cartoonists draw the figure, but Mr. Bray draws the arm in the act of moving. When the sketches have been made, they are turned over to the staff of assistant artists who complete them, drawing them in ink and filling in the color.

To reduce the effect caused by the projection of much white light on the screen, Mr. Bray has invented and patented a process for making a uniform background. By this method one painting of the background suffices for the entire reel.

"When the set of cartoons is completed, four expert cameramen photograph them to obtain the negative film," Mr. Bray said. "An important feature of my invention consists of a method for controlling the speed of action in the picture. This is done by varying the number of photographs taken of each cartoon. For instance, if the scene demands that an object shall move rapidly, then slowly, and finally come to a stop for a moment, the pictures representing the quick action would each be given one exposure. As the movement of the object diminishes in rapidity, each picture is given a correspondingly increasing number of exposures. When the action comes to a stop numerous photographs are taken of the same picture, the number being dependent upon the length of time that the action is suspended."

The Tenth Annual Exhibition of the M. A. A. Camera Club will be held in the Montreal Athletic Association Building, 250 Peel Street, Montreal, Canada, from April 10th to 15th, inclusive, 1916.

Exhibits must be delivered, carriage paid, to the Secretary, 250 Peel Street, Montreal, on or before the 20th of March, 1916, and an entry form, properly filled out, must be mailed separately, to reach him before that date.

Exhibits from points outside Canada must be sent by post, thus avoiding Customs' formalities, in receiving and returning. No fee is charged for entrance.

Pictures must be mounted, but may be framed if desired. Each must bear, on the back, the title, the exhibitor's name and address, and club, if any, to which he or she belongs.

MARKET FOR PHOTOGRAPHS

W. CLEMENT MOORE

In America, is perhaps the largest publication market for photographs, especially those that are easy to secure. It is not at all difficult for the observing photographer to find twenty to thirty good subjects for photographs every month, and have them accepted by agricultural publications.

In the United States to-day, there are nearly five hundred weekly and monthly publications being issued, all of which are devoted to the farming industry. These journals will use on an average, at least six thousand different illustrations every month, or nearly seventy-five thousand a year. Nearly sixty per cent of these illustrations are made from photographs for which the publications are glad to pay a reasonable price.

In fact, ninety per cent might well be from purchased photographs if the publishers could get what they want, but they find it difficult indeed, to get subjects that are new, striking or interesting.

This then, should be the duty of the photographer—to study the needs of the agricultural press and then endeavor to find subjects which will not only fit the needs, but actually breathe an originality which will compel the attention of the editor as soon as it is opened. In order to get a better idea of the right kind of photographs to sell, you should study the illustrations which agricultural publishers use on their front cover pages, for they always select what they consider the best and choicest for this purpose. When you have done this, take your camera and go into the farming section with the determination to make all of your photographs *fit for front cover pages*—if you will do this and keep such an ideal before your vision, you will bring back with you a collection of negatives which will develop prints that will find a ready acceptance with the majority of journals.

A LIST OF AGRICULTURAL MARKETS

Progressive Farmer, Birmingham, Ala. A journal which features Southern farms and farming methods, but which also offers a market for photographs of children on farms at work and play, herds of cattle, and the adaption of new machinery to modern farming. Payment, 25 cents to \$1.00 per print.

Farm and Home Builder, Phoenix, Arizona. Devoted to the development of the Southwest, but will use good photographs of farm home life and of small model farm homes. Of course Western photographs are in greater demand.

Ozark Farm and Fruit Belt, Siloam Springs, Ark. Good photographs of fruit culture, insects, pests, spraying methods, orchards, marketing fruit, etc., are in demand by this publication. Published monthly. Rates 50 cents each and up.

Western Empire, Los Angeles, Cal. One of the best markets for photographs of Western farm life, but there is a good chance for good

prints of stock, including horses, cows and hogs. Pictures of home life on the farm also are acceptable. Catchy photographs for feature work are also in demand. Published monthly. Pays 50 cents to \$2.00 per print.

Field and Farm, Denver, Colo. This is a publication of general interest, covering a number of subjects which admit of good illustrations, methods of farming rocky soil—modern fruit culture—farm homes, etc. Prices 50 cents to \$1.00. Published weekly.

Orange Judd Farmer, Chicago, Ill. A publication of several departments covering a wide scope of subjects. Poultry, cattle, horses and live stock photographs are in demand. Photographs of poultry and stock buildings, farm scenes, crop exhibits, etc., find a ready market; also contains home departments which are illustrated. 50 cents to \$2.00. Published weekly.

Farm Life, Spencer, Ind. Photographs of stock prize winners, improvements of planting methods, marketing methods and exhibits, unusual things in farm life, school buildings and playgrounds in rural districts, etc., all find a ready market with this live monthly publication.

Homestead, Des Moines, Ia. A great weekly publication of national circulation, so that photographs from any section will have an equal chance. Photographs of rural home life with a personal or human touch, are most in demand. Good pictures of child life also find acceptance. Rates good.

Successful Farming, Des Moines, Ia. Another national monthly paper. Printed on good paper, and profusely illustrated with a great variety of pictures, nearly every subject pertaining to farm and home life. Many may be submitted.

The Country Gentleman, Philadelphia, Pa. one of the leading national weekly farm journals. Reaches the most successful farmers, and desires photographs of large estates, the most approved farming methods, ideal rural farm scenes and home life pictures. Prices \$1.00 to \$5.00.

There are many others. It is a good plan to secure a large number of sample copies by writing direct to the publishers, then classifying them according to the kind of work they need. Follow the same plan in submitting prints to farm papers that have already been suggested, and if your selections are made with care, and your prints clear, you ought to be successful.

Apparel Gazette, 311 East Fourth Street, Los Angeles, Cal. A monthly, accepts news items and photos of interest to the trade.

The Milliner, 215 South Market Street, Chicago, Ill. A monthly, uses news items and photographs which are usually supplied by paid correspondents, perhaps you can get appointed.

American Dressmaker, 41 West Twenty-fifth Street, New York, N. Y. A monthly, a technical fashion publication, might be in-

terested in illustrated fashion articles of especial interest to dressmakers.

American Furrier, New York City, N. Y.

Millinery Trade Review, New York, N. Y.

Uncle Remus' Home Magazine, Atlanta, Ga. A monthly with regard to special articles, illustrated features, features with an industrial bearing, and so forth. They want photographs tied to the South in some manner, more particularly than fiction.

National Food Magazine (What to Eat), Herald Building, Chicago. A monthly, illustrated articles on subjects of food and health and entertainments.

Woman's World, 107 Clinton St., Chicago. A monthly, uses illustrated short stories and illustrations for verse, serials, special articles, anecdotes for filler and for its department, "The Children's World," short stories, verses and brief illustrated articles.

Needlecraft, Augusta, Maine. A monthly, desires contributors to consult the editor before sending manuscripts. It has a department, "What Other Needle Workers Have Found Out," in which it prints illustrated descriptions of plain sewing, embroidery and lace-making. Offers three prizes of \$1.00 each.

Modern Priscilla, 85 Broad Street, Boston, Mass. A monthly, devoted primarily to fancy work and sewing. It has a section devoted to housekeeping affairs. Articles of practical, wholesome nature are desired. Buys illustrated prints, which reproduce original patterns in different kinds of fancy work, and photographs illustrating household articles.

L'Art de la Mode, 8 West Thirty-eighth St., New York. A monthly, will be glad to consider articles with illustrations of from 1,000 to 2,000 words in length, on subjects allied to fashions, and of interest to the average American woman.

Health, 27 Vandewater Street, New York, N. Y. A monthly, devoted to physical culture and outdoor life—the medicineless treatment of ills offers a market for short articles illustrated.

The Plymouth Cordage Co., North Plymouth, Mass., are offering Five Dollars for a 4 x 5 picture showing Plymouth Rope in actual use, or scene connected with its sale, or a window display. Write for particulars.

Now is the time to get out your cameras and try to win a prize. The National Association of Audubon Societies offers ten prizes for the best photographs of wild birds feeding at window boxes, food houses, food shelves or any feeding device. The first prize is \$15 in cash, the second \$10 in cash, the third \$5 in cash, fourth and fifth Chapman's Handbook of Birds of Eastern North America, sixth, seventh, eighth, ninth and tenth, Bayney's Wild Bird Guests. Photographs must be mailed to T. Gilbert Pearson, 1974 Broadway, New York City, on or before April 1, 1916.

The points that will be considered are:

1. The number of individual birds in the photograph.

2. The comparative shyness of the species that have been attracted to the feeding board.

3. The experience and definition of the photograph.

4. The attractive appearance of the feeding device from the human as well as the birds' point of view.

5. A composition of the photograph as a picture.

MAKING ENLARGED PAPER NEGATIVES

WILLIAM MORISON

The following method of making paper negatives direct from negatives is worthy of attention. The process is very simple and there is no very apparent reason why it should not be adapted to the production of a ready toned positive enlargement from a lantern slide, or the production of duplicate negatives on glass. Possibly some slight modification of Mr. Morison's methods may be necessary in such cases, and a good deal will no doubt depend on the first exposure. Perhaps some of our readers will like to experiment in these directions and to report results.

Attention has often been directed to the making of a negative from a negative by printing and developing a positive, then dissolving away the reduced silver image, exposing the remainder of the silver bromide to light and developing it. The new negative is thus built up from the silver salts that in the ordinary process of making a positive are fixed out in the hypo bath. The following process is more or less the reverse of this one, and, while perhaps not new, is rather more easily carried out.

Various densities of negatives can be secured by varying the first exposure, generally from two to three times the exposure required for a good positive should be given. Proper time, however, varies somewhat with the paper employed.

The working instructions for paper negatives are as follows: Exposure is made by contact or through the lantern, and the print is developed as far as it will go without fog. It is then rinsed in water and placed in a chrome alum bath, after which it is flooded with the usual sulphiding solution employed in sulphide toning until the action of the sulphide is complete. The paper must then be well washed free of all sulphide and the original developed image is then bleached out with any convenient bleacher, such as ferricyanide and bromide, and dissolved by a fixing bath of hypo.

The result is a finely graduated negative and the printing density is good, owing to the color of the deposit. This density can be regulated by the first exposure, during which also any local shading or the insertion of clouds can be effected. A long exposure gives a thin negative, and *vice versa*.

Lantern slides can also be made by this process direct from lantern slides, and the resulting image is of course a toned one.

NEW THINGS

Photographs which have not been protected with glass and have become soiled either by dust or fly specks may be cleaned very easily by wiping them off with absorbent cotton dampened with pure alcohol.

A Philadelphia newspaper has a wagon for its photographic department, consisting of a mammoth model of a Graflex camera, including the hood and lens. The lens is fully 20 inches in diameter, and the outfit attracts considerable attention.

"How To Make Prints In Colors."—Practical Photography Series No. 4. Edited by Frank R. Fraprie, American Photographic Publishing Company, Boston, Mass. Cloth 50 cents; Paper Covers, 25 cents.

The value and importance of selection of the color of the print with reference to the character of the picture is a consideration more observed in the breach than in the observance. The selection is made upon no constant principle, and the portrait is discharged in the same color as the summer landscape or the roadside covered with snow, without the least regard of the eternal fitness of things.

The prevalence of color in any particular instance seems to be determined by the dictates of the ruling fad, and the result is that the quality and individuality of a good print is nullified by the incongruous color in which it is frequently exploited.

There is, therefore, an opening for just such a book as this on the subject of appropriate color for the print and the best means to secure it. The pamphlet goes into the subject quite exhaustively, and tells of the innumerable ways directly and indirectly for securing colors. We, personally, are glad to have at hand such a good compendium, inasmuch as we have frequently lost much time in hunting up, from various sources, information asked just upon this subject. And this is a good and trustworthy compilation by a practical worker, who knows just the points the worker is desirous of getting in touch with. It contains only about 70 pages, but is brim full of good matter, and treats of all the processes for color.

Dear Sir:—May I offer my thanks for your kindly criticism, No. 1087, in the January number. In this case it is all the more appreciated, because entirely unexpected, on account of my not sending data.—H. P. T.

Dear Sir:—I have received the "Library of Amateur Photography," and am more than pleased with it. I have already obtained much valuable information from it, and at the same time derived a great deal of pleasure. Thank you very much for the promptitude with which you forwarded it.—J. C. B.

Letters to the Editor

Dear Sir:—I have just seen (Saturday afternoon, January 8th), the note on Page 44 of the January issue of THE CAMERA, stating that the Third Prize awarded to my picture, "The Uncommon Aspect of Commonplace Things," in your Contest No. 199 (which closed November 30) has been withheld because I "entered this same photograph in another competition," and that you will not accept photographs that have won prizes in other competitions.

I seem to have made a mistake which I most sincerely regret, but I cannot help believe that in submitting my print to you I did not infringe your rule, which states that "Prints that have appeared in other publications are not eligible."

The facts are that this print had never won a prize before it was sent to THE CAMERA, nor had it even been sent to any other magazine before THE CAMERA.

In the latter part of November I sent copies of the print, practically all at the same time, to THE CAMERA, Photo-Era and American Photography. About a week later I sent one to the Amateur Photographer's Weekly for entry in the Bi-Weekly Competition closing December 8th, and it was awarded first prize, but the print was not published, and the winners announced until the issue of December 24th, by which time I believe the January photographic monthlies would be on sale.

I felt that I had a meritorious print, but I did not wish to be partial and give any magazine the first use of it, so I wrote to the Amateur Photographer's Weekly about the middle of November asking what time would elapse between the closing of the Competition and the announcement of the results. Under date of November 20th I was advised that "the results of the competitions are always published in the issue dated three Fridays later." For instance, the competitions closing December 8th are judged on that date, and the results published in the issue of December 24th. By this date (December 24th) I believed that the January numbers of the other magazines would be issued and on the news-stands, thus no one journal would have a first use of the print except as one or the other might be slightly earlier in getting out its January number. I am an advertising man, and quite familiar with the general monthly magazines, but only within the past six months or so have become a reader of the photographic journals, and my impression was that they, too, like the general magazines came out a week or so in advance of the monthly date they bear. Certainly my print had not appeared (see rule) in any publication when it was submitted to THE CAMERA, and I certainly tried to avoid such an occurrence.

My print, "The Uncommon Aspect of Commonplace Things," has been awarded first prize in *Photo-Era*, November Competition, Round Robin Guild, the winners of which will not be announced until the February number.

I sincerely regret that I did not note that *Photo-Era* does not usually announce its winners until the third month number following the closing date of their competitions, whereas the other monthlies, I think, make their announcements two months following. *Photo-Era* would, I think, have more just cause to complain, under the circumstances, yet Mr. French has treated the matter in a very liberal spirit, paid the award, and only made a brief reference to the matter, and in a most kindly way.

I feel most keenly about the matter, because you did not send to me a notice of the award nor a communication of any kind regarding it, and published your note without offering me an opportunity to explain the misunderstanding. Surely the award must have been decided upon long before the publication of the picture in the *Amateur Photographer's Weekly* (December 24th), which decided you to withhold the award. Had you sent notice to me of the award I would certainly have advised you as to what photo materials I wanted. And if, when you decided to withhold the award, you had notified me, I could at least have sent to you an explanation which would have modified the note which you printed on Page 44 of the January issue.

This has placed me in a very unfavorable light with your readers. I feel no resentment, however, for undoubtedly you believed, at the time, that your note was justifiable.

I note, however, that in the December issue of *THE CAMERA* you publish Mr. Bradford's winning print, and in the same issue is printed his letter of acknowledgment. Yet, in my case, I had no communication of any kind from you, and only now (January 8th) have I learned (by seeing it in the January number) that my print had been given an award. I have been wondering why I haven't heard from you, nor received the print for which I enclosed return postage.

I do not like to occupy your columns with such a lengthy communication as this, but I trust to your spirit of fairness, and believe you will publish it in full in your February number.

I understand now that you do not wish to accept prints for your Competitions that are also submitted to other publications in which they are likely to be published at the same time with yours, or slightly in advance, even though the print (as in my case) has never been awarded a prize at the time it is sent to you, nor been sent to other publications before being sent to you. Is that correct? If so I think you should make it more explicit in your rules.

I shall observe this point in the future with

all publications whether the rules are explicit or not.

I regret this unfortunate occurrence very much, indeed, as I certainly would wish to avoid any possibility of offending my good friends, the photographic journals, to whom I owe so much for whatever knowledge of photography I have.

By the way, it happens that the 1915 June number of *THE CAMERA* was the first photographic journal I ever read. All that I know about real photography has been learned within the past six months. I am only an amateur, and since three or four years previous to last summer I had not made a negative, and those that I made before that time were, well, the least said about them the better.

I sent my prints of "The Uncommon Aspect of Commonplace Things" to the magazines with the thought that the unusual method of making my cloud negatives (3 exposures of 1-25 second, f11, bright light, with 3X screen) and other data I sent might be used as a text for some helpful technical suggestions by them for amateurs.

MILTON M. BITTER.

[We are printing Mr. Bitter's letter in full and naturally appreciate the fact that he felt hurt at our decision, but in justice to our other contestants, this was necessary.

The photograph is an excellent one and worthy of recognition, but sending the same photograph to four different magazines at the same time, and having awards from three of them, is not doing the fair thing to the other contestants and the editors.

Our January issue was later than usual, and the final forms on press when we discovered the award in another photographic publication—naturally we had to drop Mr. Bitter's award and shove up the next contestant.

Regarding Mr. Bradford's picture in December, the writer called him on the 'phone and advised him of his winning. His letter naturally appeared in the same issue with that of the prize picture. We usually advise contestants of their awards on our usual publication date, the 26th—EDITOR OF *THE CAMERA*.]

Dear Sir:—The other day I had occasion to make some glossy prints for reproduction purposes, and as I do not possess a ferrotype tin I tried to make them on a piece of ordinary window glass. At first the prints stuck and refused to come off without leaving part of their glossy surface on the glass.

I then tried carefully cleaning the surface of the glass with alcohol, and after thoroughly drying placed the wet print on the glass and squeegeeing it onto the glass with my hand.

Then I placed the glass on a shelf just back of the stove and let the paper do its own work in removing itself from the glass. This it did in fine shape, and as I have never heard of anyone using this method to produce glossy prints it might be of interest to your readers.

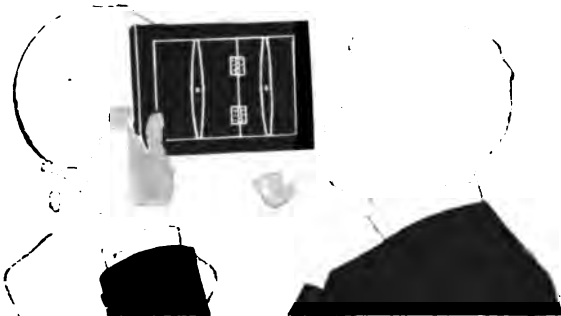
—R. T.



Here is a lens that we make ourselves—a lens that has a trifle more speed than the best of the Rapid Rectilinears and that in quality—depth, definition (sharpness) and flatness of field is the equal of the best anastigmats. It is made solely for, and is therefore adapted to, hand camera work.

We are able to sell Kodaks equipped with this very superior lens at only a slight advance in price over an ordinary rectilinear lens. Even to those who are purchasing the cheaper Kodaks, the slight additional cost of the Kodak Anastigmat *f.7.7* is a conservative investment. It will pay dividends in better pictures.

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Volume Twenty

MARCH 1916

Number Three

ENLARGEMENT METHODS—C. H. CLAUDY

THERE are so many of them, and the beginner is so confused, as a general rule, by the multiplicity of methods of doing anything photographic, that perhaps a few notes on several of the more common methods may make a choice of one easier.

As most beginners and all of experience know, an enlargement is some process of photographing a negative, usually on paper, and thus yielding one large positive as a result. The methods, as stated, are many. Among them we find the following:

The use of an enlarging lantern. The use of an enlarging camera.

The use of a small camera with an additional bellows, making an enlarged negative.

The use of the small camera in the dark-room, making the whole room a camera.

Making a reduction from an oversize enlargement in order to use and conceal handwork.

There are others, but these will suffice.

Of all the various methods, the use of the enlarging lantern is the easiest, and perhaps the most fascinating. The principal drawback is the expense of the apparatus, a good enlarging lantern often meaning the investment of money which the photographer, not always improperly, thinks better put into a fine lens.

The enlarging lantern consists of some source of light—in these days a nitrogen tungsten is very satisfactory, although oil, acetylene, gas with a mantle and even the arc are sometimes used—a set of condensing lenses to collect and focus the light roughly through the negative upon the projection lens, which in turn forms the image upon a screen on which is placed the sensitive bromide paper on which the picture is to be made. This statement includes the slower and so-called “gas light” papers in which lantern enlargements are often made at a sacrifice of speed. Velox enlargements with a lantern are perfectly possible, but somewhat longer in the making than the faster bromide.

The size of a lantern-made enlargement is limited only by the size and sharpness of the negative and the available paper. It is governed by the distance of the paper from the lens. The practical limits are soon reached for the amateur, since anything bigger than sixteen by twenty inches means larger trays, greater expense and more trouble than he is usually willing to assume. Probably the majority of enlargements with a lantern are 11x14 and under.

The lantern has many advantages, of which the greatest of all is the ability it gives the operator of "dodging" the enlargement. As the image is out in the room and visible, he can wave a card in front of the lens and so shield the too brightly lighted parts, holding them back while the slower or denser parts of the negative have a chance to print. Its second great advantage is in the control of the light, since ground-glass screens may be slipped in between and before and behind the condensers, thus cutting down the light. The stronger the light in a lantern, the less the contrast in the result and *vice versa*, and as control of contrast is often valuable, this feature of a lantern is particularly to be commended.

The enlarging camera is eight by ten or larger, and is so arranged that the bellows extends in front of as well as behind the lens. The front end of the camera is provided with "kits" which hold any desired size of negative. The rear end of the camera is provided with "holders" in which either paper or plates may be slipped. The lens is in the central part of the camera. Center and both ends are moveable, of course, so that the three parts may sustain any desired relation with each other. The enlarging camera usually uses daylight as an illuminant, a sheet of ground-glass or of cloth before a window supplying an even light. The disadvantage of the enlarging camera is the inability to dodge the negative with any degree of certainty. On the other hand, the finest of focusing can be done, even microscopic focusing with a focusing glass on the ground-glass, and the enlarging camera lends itself so readily to copying, to the making of lantern slides, of positives, of enlarged negatives, that it is often purchased rather than a lantern as being a more "all around" piece of apparatus. The use of daylight for enlarging is valuable on thick negatives but, on the other hand, the fluctuating quality of daylight makes the judgment of enlargement exposures made by it a matter of some doubt and experiment, whereas the illuminant in the enlarging lantern is of a constant strength, unless deliberately altered by intention.

To those to whom either investment is prohibitive, the small camera with the additional bellows offers a good substitute. The additional bellows may be made in any manner which materials and ingenuity can manage. A cone of cardboard, four-sided (can a cone have sides?), its larger end fitted to receive a ground-glass holder and plate holders from an eight by ten camera, its smaller end joining on the smaller camera, allows a very good substitute for a regular enlarging camera to come into being. Of course, here the lens is at one end of the camera, and not in the middle as in a regular enlarging camera. To accomplish the same end, the negative to be used is supported in a window which is blocked up save for the opening the negative covers, in which event



"THE SEERESS." WILLIAM SHEWELL ELLIS, PHILADELPHIA



"STUDY." WILLIAM SHEWELL ELLIS, PHILADELPHIA

the room, dark, acts like the front end of the regular enlarging camera. If this is not convenient, supporting the negative in a printing frame, holding it in place with pins and leaving off the back of the frame, setting it on edge on a table near a window, and throwing a focusing cloth across two rods resting on frame and camera front will accomplish the same purpose. The function of the bellows between lens and negative in the enlarging camera is to keep extraneous glare from the lens. A focusing cloth used as described will do the same thing. It is not essential that this "bellows" be absolutely light tight, as, of course, is necessary in that stretching between lens and plate or paper. All that is required is enough shade for the lens to prevent glare from reaching it, which would to some extent fog the enlargement.

Many workers insist that no direct enlargement can compare with that made from an enlarged negative. There are two processes commonly used for making enlarged negatives, both of which have their advocates. One contemplates making a "same size" positive and from this making the enlarged negative—the other, making an enlarged positive and from this the enlarged negative by contact. Of which method most can be said, the present scribe does not want to commit himself. But it is certain that if any handwork is to be done, the enlarged positive offers the opportunity for work on shadows with a pencil, which the small positive does not. The advantages of working in shadows with a pencil on a positive, rather than with a knife on a negative, are sufficiently obvious to require no discussion. Either enlarging lantern, the enlarging camera, or the substitute mentioned may be employed, but it is easiest done with the two latter, because an enlarging lantern usually leaks some light—not enough to hurt a bromide, but ample to fog a plate on which an enlarged negative or positive is to be made.

Except for the opportunity it offers for handwork, and also the convenience it affords in making many copies of the enlarged picture, the enlarged negative has very doubtful points of superiority over the direct enlargement on paper, besides adding to the expense of the paper the cost of the big glass plates. It is certainly much less a method for the beginner than direct work, but plays an important part in pictorial efforts, where individual artistry with brush and pencil play their parts for which reason it is mentioned here.

The easiest and least expensive way for any one to make enlargements is by the use of the small camera as an enlarging lantern with daylight for an illuminant. This requires window fittings which allow the camera, back removed, to be fitted against an opening, the rest of the window being blocked and the room dark. By this arrangement the whole room becomes the enlarging camera, just as it is when a lantern is being used, and all the advantages of the lantern for dodging are at once available. Most small cameras have sufficient draw to enable them to be so used, but it will be well to measure beforehand and make sure. If the camera has double the length of draw necessary to accommodate the lens when focused on infinity, it will make any size enlargement from one, the "same size" as the negative, up. If a camera with a six-inch lens has a nine-inch draw, no enlargement less than double size can be made

with it—thus, with a four by five negative, an eight by ten enlargement will result with a six-inch lens extended nine inches from the negative. The paper in that case must be at eighteen inches distance from the lens, to be in focus. But any size larger than double the negative size can be made with the small camera thus adapted. It should be noted, however, that it is just as easy to increase the available distance between lens and negative in even a very small draw instance, as it is to build the window fitting in the first place. Simply have the window fitting in the form of a bottomless, topless box, which makes a joint between camera back and window, the depth of the “box” representing the addition to the available “bellows.”

Beginners who want to try their hand on enlargements from the artistic standpoint should make an oversize enlargement by any convenient process—if what is wanted is an eight by ten from a four by five, commence by making a sixteen by twenty. On this enlargement do the handwork. Deepen the shadows with pencil or charcoal, lighten the high-lights with an air brush or with Chinese white and brush—do anything and everything your fancy dictates and then—make an eight by ten negative of the result and print from it. The result will be an enlargement from the original negative, but an “ensmallment” from the copy set before the camera, said “ensmallment” serving to conceal brush marks and minimize any crudities in the handwork.

As can easily be seen, there are plenty of methods from which to choose—the difficulties of enlarging are not great and the process fascinating in the highest degree, no matter what method is selected. Those beginners who fear to tread the path of bigger pictures because of apparatus costs in the way, are respectfully urged to try some of the makeshifts—once tried, there is small doubt that pennies will commence to save themselves towards the lantern or camera which offers convenience in the highest degree for this most interesting photographic bypath.

THE LANDSCAPE AND THE LENS

THERE is almost a consensus of opinion among photographers that pictorial effect is much more assured by the use of a lens of considerably long focus, than when a comparatively shorter focus objective is employed. The desire of all art workers with the camera is an approximation in the picture to the presentation of that of the painter. There is no gainsaying this dictum of the advocates of long-focus, for in the majority of cases, lenses of as long foci as may be conveniently used, make the best picture, for the simple reason that the forced perspective, which is generally known by the term “distortion,” is avoided by use of long-foci lenses. The objects in the landscape are thereby represented relatively to themselves, and present more the appearance which they exhibit in the artist’s work.

The argument of the advocates is easily sustained, and the general advice to restrict ones self to long focus lenses for landscape work may be salutary, particularly to the beginner. But while appreciating the advantages



"STUDY" R. C. NELSON, HASTINGS, NEB.



"STUDY." R. C. NELSON, HASTINGS, NEB.

gained, we feel that some little cautionary remarks from a painter, as well as a photographer, may not come amiss; not to pin ones faith down to any particular theory, but rather to look broadly at the subject, and we shall find not a few cases where the exception to the rule works better than the rule itself. Supposing an amateur is off upon a jaunt to do some landscaping. He has his five-by-seven camera, and in obedience to the oft reiterated admonition, he has provided himself with the long-focus lens only, say in this case, the twelve inch lens. We predict he shall bring home with him less pleasing artistic results than his companion, with the same size plate, but with an eight inch lens. When we say less work, we mean less in range of subject. It is true that in all those subjects which, owing to the nature of the ground and surroundings, one cannot approach very close, the long-focus picture will have the advantage. But how rarely it happens that we can get a good picturesque group, with clear space for fifty or a hundred yards about it, in order that we may command a distant point of view. We know only too well, from personal experience, how often, in our enthusiasm to produce artistic work, we have restricted ourselves to the long-focus lens, only to return at the close of the day from excursions amongst picturesque rocky and wooded creek scenery, without exposing a single plate, because we knew, from the presentation of the view upon the ground glass, that such views would only annoy us, if we should expose and take the trouble to make negatives.

In these remarks, understand, we are not including sea shore nor any marine photography, which is really a separate branch of photographic art requiring a special treatment, not only as regards the lens used, which must, of necessity, be one of long-focus, but also in the matter of timing the exposure. For those who intend making an extended tour amongst varied and grand scenery, if it is their aim to succeed to the fullest extent photographically, it will be necessary that they provide themselves with at least two, and better still, with three lenses, properly proportioned to the size of their outfit; thus making it possible to take in the grand, distant range and average view, as well as the picturesque bits of beauty of wood and dell. The majority, who must restrict themselves to one lens and whose excursions will not include large mountain ranges, must not feel discouraged at the prospect of encountering too great limitations. It so happens, fortunately, that a good lens of about the focal length, or a little greater of the longest dimension of the plate used, will perform in a satisfactory manner, a great variety of work. Such combinations will give us pictures where the range is quite considerable, and if the subjects be well chosen and properly proportioned to the size of the plate, and so placed that there shall be neither too much sky nor too much foreground, there will be satisfaction in viewing the finished work. In using a long-focus lens, our foregrounds are apt, in some instances, to appear too far off, or, rather, we seem to feel the want of nearer foreground than we get; and, in photographing many picturesque subjects, we make a great gain by using a comparatively short-focus lens, because we are compelled

to go so close up, as to separate that which we wish to make the principal feature, from what is back of it in the view. We have found this to be especially the case in the photographing of fine trees. By a near point of sight, the background objects are so thrown off and diminished so that they do not interfere much with our main feature. What we want particularly in our picture thus stands out boldly, as do the trees, we speak of, as well as other picturesque objects. There is no unpleasant perspective, which would show in architectural subjects or figure groups. A fine tree, which, if photographed at a distance with a long-focus lens, would completely jumble into its background; but if taken close at hand, it will tower above what is back of it, and stand out beautifully as the feature of the work. Indeed, we are inclined to the belief that the amateur, who understands to the fullest extent, what may be done by a judicious use of lenses of different foci, in the way of aiding the artistic effect of his subjects, sometimes proportionately enlarging, at other times diminishing, advancing or receding, as the case may require, will come out much better as an artist, than the one who pins himself down to the sole use of any one objective, no matter how perfect as an optical instrument it may be, or however much applauded by advocates of preconceived prejudice as to its efficiency as the only instrument for artistic exploitation.

BEGINNERS' DIFFICULTIES IN BROMIDE ENLARGING—D. BERLIN

IT HAS fallen to the writer, on many occasions, to give instruction and advice to persons taking up bromide enlarging, both among professional and amateur photographers. The difficulties experienced and the character of the unsuccessful results often obtained at first are almost always alike, so that a few hints regarding these may be acceptable to some who are commencing in this branch of photography. A perusal of these notes may save a good deal of the disappointment and waste often occurring.

The difficulties referred to are quite few, and it is not proposed to enter into the hundred-and-one details of process and apparatus, as these are well covered in several cheap manuals on the subject. The two principal troubles met with are: First, flat results, which will not compare in quality with contact prints from the same negatives; and, second, a want of evenness of the illumination on the easel, which will probably show itself in the enlargement, especially in the case of groups, which would in that state of affairs come out with some of the faces noticeably lighter or darker than they should be.

There are a few other difficulties which may be found troublesome and puzzling when they occur to the uninitiated, but which are quite easily overcome. These minor troubles are: blisters, white specks in lines or groups, and a doubled image.

Taking each of these points separately, a flat-looking result may be caused by fog—that is, by light other than that forming the image acting



FROM 1915 KODAK ADVERTISING CONTEST
WILLIAM SHEWELL ELLIS, PHILADELPHIA



"TAKE A KODAK WITH YOU." FROM 1915 KODAK ADVERTISING CONTEST
W. B. STAGE, NEW YORK, N. Y.

on the paper. If this should be the case, no part of the sheet will be white, and the most probable cause would be an unsafe dark-room lamp. Bromide papers can be handled, of course, in a much brighter light than plates, and in most cases two thicknesses of "Canary fabric" should suffice to make the light safe. There should be as bright a light as possible consistent with safety, so as to see the development of the prints with comfort and ease. To test the safety of the light, place a small strip of bromide paper at about two feet from the lamp, with a coin or other opaque object lying on the sensitive side. Leave it exposed to the light for two minutes, and then place it in the developer for the same length of time, and if an outline of the object can be seen, another thickness of the yellow fabric should be placed over the light.

If an "M. Q." (metol and hydroquinone), developer be used, its temperature should not be allowed to fall below 60° Fahr., as the hydroquinone will then not work properly and weak images only will result. The best temperature for the developer of whatever variety, is about 65° Fahr. Stale paper is occasionally the cause of poor results, and care should be taken to obtain supplies from a reliable source, and if a reasonable doubt be entertained that faulty results are due to bad paper, a piece or two should be sent to the manufacturer along with one of the spoiled prints, and the outside wrapper bearing the "batch number."

The most usual cause, however, of flat enlargements, is over-exposure, coupled with under-development. A good, average, bright negative should be chosen, such as will give a nice contact print in any ordinary process, and placed in the lantern to make the first attempts. Having focused the image, a few strips of bromide paper should be cut to avoid wasting whole sheets, say about 6 in. x 1½ in., and one of them pinned up and exposed. No guide can be given, as lights, negatives, and papers vary enormously, and so, in each installation, the first one or two trial exposures can only be done by guesswork. The trial strip should include a bit of the densest part of the negative in which detail is wanted and a bit of the thinnest, as well as some shadows in between. After exposure, the strip is placed in a dish of developer, which is kept gently moving. The image should come up gradually and take not less than one minute, but one and a half to two minutes would be better. If the lightest detail comes up before one minute, or if the picture greys over quickly, the exposure has been too full. On the other hand, if the picture is not at its full strength in two minutes, more exposure is required. At first, all "trials" should be given a good minute in the developer, until one becomes able to judge from the rate at which they come up whether the exposure has been correct or not. When a good trial strip has been obtained—that is, when it has received just so much exposure that about two minutes' development produces a bright image, it should be rinsed slightly and placed in the fixing-bath and the white light turned up for confirmation.

A full sheet can then be exposed, and if developed in the same developer for the same length of time, obviously an equally satisfactory print should result. Bromide prints, especially matt-surfaced ones, will dry slightly darker

and duller than when wet, and if the negatives are not of the very best, a semi-matt surface will perhaps give the greatest satisfaction at first. When developing "trials," it is not a bad plan to examine the strip by transmitted light—that is, holding it up so that the light shines through the paper, when development is nearly done, and if the image looks as brilliant then as it does when seen flat in the dish, it may be taken as an indication that the exposure has been correct and that the print will be a bright one.

In enlarging, as in negative-making, correct exposure is more than half the battle. The rule is to expose so as just to get the lightest details to show with thorough development. If the negative be contrasted, the same rule holds, but a dilute developer can be used; while for a flat negative, a few drops of potassium bromide—say one drop to each ounce—10 per cent solution, will tend to correct this, but a longer development should be aimed at. "Trials" should be made for every negative, if real satisfaction is desired. Only those who are engaged in this work as a constant daily occupation can really dispense with this precaution, or those whose negatives are of remarkably even character.

The question of illumination differs as to details in each outfit, but the main points are similar. In a daylight enlarger or in one of those worked by reflected artificial lights, illumination is generally quite even, if a good, large surface (much larger than the negative) of reflector be provided, and this must be dead white, not polished mirror or metal. Also, direct light should not be allowed to reach the negative. In an enlarger fitted with a condenser, the circumstances governing even illumination are somewhat more complicated. If the apparatus be set up in the dark-room with the lamp alight, but with the front and lens removed, a beam of light will be seen issuing from the condenser and converging more or less to a point. The distance of this point from the condenser can be varied by altering the distance of the light from the other side of the condenser. The smallest part of this cone of light should fall in the lens when in position, and as the lens has to be used at various distances, according to the degree of enlargement, so also must the position of the light be altered accordingly. This movement is almost always provided for by a sliding arrangement to and fro, in addition to means for raising and lowering the light and moving it sideways.

A negative should be placed in the carrier, roughly focused, and then removed. The lens should be stopped down slightly and the easel (which should be covered with a sheet of white paper) examined. It will then be easy to see if the lighting is even, and, if not, the light should be shifted, laterally or vertically, until the brightest part of the disc is central, and then the sliding movement brought into use till it is equally bright from centre to margin. With some illuminants, it is not easy to obtain a perfectly even effect with a small aperture in the lens. This can be remedied by a piece of fine ground-glass between the light and the condenser. In all up-to-date enlargers, provision is made for this to be easily inserted or removed. Once the light is satisfactorily centered, it should not be altered, except when the



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rising or sliding front is used, and then the effect will be observed on examining the easel, but the sliding movement is brought into play every time any material alteration is made in the distance between the enlarger and the easel. Only by attention to the necessity of examining the illumination on the easel and adjusting the light accordingly, can certain noticeable faults be prevented.

Coming now to the other troubles mentioned, blisters are caused by too great a difference in the temperatures of the various baths, especially between the fixing and the washing water. Hypo cools the water in which it is dissolved to a considerable extent, and in winter a little warm water should be added to counteract this.

White specks on matt or rough papers are due to minute air-bubbles, and show themselves when the developer is not flowed over in an even, unbroken sweep. This takes a little practice in sizes over whole-plate, so at first the print should be soaked in plain water for a minute before development, and the trouble will then never occur.

A double image may be caused in two ways. One way is by vibration, either by touching the apparatus, or by walking about heavily during exposure. The other cause of this defect may be that the yellow glass cap is of a light tint, and allows the image to print faintly at a slight distance from the actual white image. The glass of the cap should be of a deep, rich orange to prevent this occurring with a powerful light-source.—*The British Journal of Photography*.



"MOONLIGHT." SECOND PRIZE, THE CAMERA COMPETITION NO. 201
J. HERBERT SAUNDERS, LEEDS, ENGLAND

APPRECIATION OF LANDSCAPE

ERNEST WILLIAMS

IN the consideration of art productions as they exist today, and what relation the multitude bears toward them, to the observer of such matters it is only too apparent that men in general, who make slight pretense to an appreciation of the beauties of the graphic arts, or who profess any understanding of the intricate and subtle phases of art, if they show any interest at all, it is only for that branch of picture-making which deals with themselves, which portrays some human activity, or tells some story of human life. They find it almost impossible to recognize anything worthy of their admiration in any picture which may be lacking in purely human elements. This narrow view is only natural in an age when men's almost constant occupation is their dealings with other men in the business world, where they are associated continually with men of their class, engaged in similar occupations, thinking on the same subjects, and where keen business competition keeps them always on the alert. Even in their reading they are not likely to go outside of anything that does not fit in with their accustomed modes of thought—their practice in this direction being mainly confined to the reading of the daily newspapers, which, for the most part, are devoted to matters entirely outside the domain of art. It is not the province of the newspaper to devote much space to so intricate a subject as art, and where any reference is made to it, it is usually in the nature of criticism, which is generally so erroneous and misleading as to be of very doubtful value. It is but the natural consequence, that in a time so almost exclusively devoted to commercial pursuits, and considering the general mode of thought that accompanies them, the majority of men can find but little to appreciate in a branch of art so devoid of the portrayal of any phase of human life as pure landscape; it having no story to tell which they are capable of understanding. They consider such productions as of little consequence when compared to the momentous problem of commercial pursuits. When they see a picture that they do not understand—which to them can tell no story because of their total lack of art feeling, due mainly to their narrow habits of life—they sneeringly exclaim: "Art for art's sake!" as if the expression meant anything or could be accepted as an apology for their ignorance of matters relating to art. Hence, it has come that men who throughout their lives have devoted all their energies to "getting a living," or acquiring wealth, look upon landscape with dull comprehension, having never known or felt any love for nature in itself, beyond a little personal pride in their green lawns, usually kept so by a hired gardener. To them there is no such thing as landscape—it is only country to hunt rabbits over, or an excellent field for golf links. The appeal that landscape makes to them is one that reaches all but deaf ears, and the "sweetness that wastes itself on the desert air," they know not of. The attitude of mankind for the most part toward art is something they think may possibly amuse them, or exists solely for the purpose of exalting and adoring wealth. The little "shy" that some select circles of society take in the way of little drawing-room



"THERE ARE NO GAME LAWS FOR THOSE WHO HUNT WITH A KODAK."
FROM 1915 KODAK ADVERTISING CONTEST. JOHN BALBRIDGE,
WALDRON, MICH.



"WRITE IT ON THE FILM—AT THE TIME." FROM 1915 KODAK
ADVERTISING CONTEST. CHARLES E. MACE, ESTES PARK, COLO.

essays, need not be taken any note of here as being of any consequence, or as expressing any sincere love for the subject, beyond the delusion that the participants are "acquiring" art knowledge. So that it is left principally to the nature lover and the artist to be true lovers of landscape.

It is the intention of this article to make a plea for a greater appreciation of landscape as being a worthy subject for the camera, and affording opportunities for recreation, as well as leading to a better understanding of the works of nature.

The subject of landscape photography will always be one of vital interest to both professional and amateur photographers—especially those who have always derived pleasure from a closer acquaintance with the works of nature, and have had a deep appreciation for that branch of art which has to do exclusively with the picturing of nature as found in landscape. Starting with an instinctive art feeling and a love for pure landscape, many photographers found it an easy transition from a mere passive appreciation of the beauty in landscape to that of the greater interest of the pictorialist who has chosen landscape as a favorite subject for photography.

It is difficult to define in language the power that landscape may exercise upon the feelings of one who knows nature's moods, and approaches her from a pure love of the artistic.

"Effects are the life of landscape," and those to whom pictured landscape cannot convey any "effects," or emotions, it must remain a blank page. If men, through lack of culture or artistic comprehension, are powerless to receive these "effects," how could it be expected there should be any sincere appreciation? But a taste and liking for nature and landscape may be developed by those who are interested enough in the artistic realities of this world to put forth some effort to attain to an understanding of them. There is no better way of cultivating the artistic faculties than by adopting as a hobby the photographing of landscape, with an endeavor always to the production of pictorial results.

The camera has often been the immediate means of making life more tolerable, by stimulating those who became interested in photography to the production of pictures; and as landscape offered the greatest variety in its materials for pictorial representation, and was the easiest and most natural subject accessible for operations, connected with the fact also that camera work is usually associated with an outing, it was only natural that many should turn their attention to landscape work. While, with the great majority who take up photography as a hobby, it has only amounted to a passing interest with them, because they were devoid of all artistic culture or any understanding of the art side of it, out of this number there have been many amateurs who, by sincere effort, have produced pictorial work in landscape, giving the impress of their personality, which is a credit to any artistic endeavor.

It is with no small degree of pleasure that one sees so much admirable pictorial landscape work among amateur photographers, and this, no doubt, arises from the fact that nearly all amateurs began their first photographic experiences with the camera in the open; and this constant photographing in

the field, when coupled with some instinctive love for nature, has perhaps more than anything else been the means of producing so many good landscape workers in photography.

It may be safely assumed that those who have developed their artistic inclinations and have pursued landscape photography with an increasing sense of its value as a means for producing pictures, would not exchange the pleasure they derive from it for that of any other known hobby. With the sincere artist there is no diminishing of interest, and as the possibilities of artistic production become more apparent from personal experience in the practice of the art, the satisfaction derived from it may be said not only to be enduring, but one that continually increases year by year. The amateur who is not only an amateur but an artist as well, and makes it his hobby, being free from the disturbing element of having to use his art as a means of providing him a living, is left free to follow the dictates of his own fancy and to carry out his artistic conceptions, with the gratifying result that we have many photographs of such pictorial value as to only appeal to true artists, and are in no way dependent for their success upon having to make an appeal to the inartistic, whose demands rest entirely outside the domain of art. It does not matter that the pictures he produces will make no appeal to the multitude, if they give pleasure to artists who have the necessary cultivation and capacity to appreciate that which is truly artistic, that is sufficient reason for their production.

It is a source of satisfaction to observe not only a constantly increasing number of amateurs devoting their efforts to landscape work, but it is self-evident, to those who have noted the gradual development of the art, that within the last few years vast improvement has been made in artistic representation



"AT HOME." THIRD PRIZE, THE CAMERA BEGINNERS' COMPETITION No. 3
RALPH S. DRAKE, LINCOLN, NEB.



"ALL OUTDOORS INVITES YOUR KODAK." FROM 1915 KODAK
ADVERTISING CONTEST. H. V. ROBERTS, UTICA, N. Y.



"LET THE CHILDREN KODAK." FROM 1915 KODAK ADVERTISING CONTEST
JOHN S. NEARY, TRENTON, N. J.

of landscape subjects by means of photography, and the standard has gradually become much higher. Those who have watched the progress made in this branch of artistic photography must have seen the gradual improvement in the work of many amateurs who began with scarcely any comprehension of art principles.

The endless variety and dissimilarity of the material with which nature is endowed, offers an inexhaustible field for the exercise of an art which we may call landscape photography. That there is no likelihood of ever exhausting these materials that nature provides, with her endless combinations capable of being turned into pleasing compositions by the artist, must be apparent to those who have worked any length of time with the camera. The combinations existing in nature which are favorable to composition, as well as the infinite variety of the moods of nature that manifest themselves in effects of atmosphere, in varying lights and shades, in shadowy mists, and many other subtle combinations impossible of description, will always furnish a field for picture-making that will last for all time, and will be the pleasure of succeeding generations. These combinations are as infinite as art itself, and this great fact leaves a broad field for the exercise of the creative faculty of the artist, thus furnishing the variety that nature does, and a "standing invitation" for all to study her mysteries at first hand, making landscape photography an ever deepening pleasure to those who have chosen the camera as a means of artistic expression.

What greater pleasure does life hold for the intelligent and enthusiastic camera worker than a survey of some new and promising landscape material? What keener delight can be imagined than the prospects of finding new and beautiful arrangements of nature's works, which may be shaped into some satisfactory composition, introducing such pictorial qualities in the picture as the subject seems to demand, and as are within the power of the operator to produce? Instead of a decreasing interest, the worker, who is not only a photographer, but an artist as well, finds the contemplation of nature's subjects and the practice of his art gradually augmenting in the pleasure it can give. His advancement in the ability to produce real pictures will be in exact proportion as this interest increases; followed up, of course, by intelligent study.

To those who have been thoroughly initiated into the pleasures to be derived from the practice of landscape photography, no urging is necessary; but to the amateur who has failed to recognize the pleasure that even a limited knowledge of art principles can give, with some power to interpret pictorial qualities into his pictures, and has allowed his camera to fall into disuse, may these words be a stimulus to take up his camera again with greater sincerity of effort to produce something that will be more than a mere photograph. The fact that the camera has been allowed to come into disuse is in most cases due to the fact that the technical side of photography, if not accompanied with some ability to produce photographs containing pictorial qualities, soon becomes monotonous. But if the amateur will take up his camera with a determination in his mind to begin an earnest study of pictures, and will endeavor to be a producer of pictures himself, the monotonous side of photography will soon dis-

appear, and the pleasure which may be derived from artistic creation will come to him, not only with keen enjoyment, but will be increasingly so as his knowledge of such matters becomes extended. When he reaches the stage that he longs to see, *i. e.*, his artistic ideals realized in his pictures, he will have made step in the direction of that permanent enjoyment which comes to the worker in any branch of art, who by skill of hand and artistic conception, constructs some object of art of lasting value. Then, to the pleasure of being able to enjoy and appreciate the works of other artists, will be added the greater pleasure that he himself has the power within his own hands to add to the stock of art productions which will in turn afford like pleasure to others.

There are other branches of photography which also are of great interest, but none that furnishes such a diversity of material, and has so much to contribute in other ways as landscape. So that we find many capable workers have confined themselves almost exclusively to the production of landscapes; not that other subjects did not hold any interest for them, but from the fact that their hobby was their recreation, and it took them out-of-doors into the open air. Associated as it is with such pleasant thoughts as are usually connected with an outing or a vacation, to many this branch of photography has come to be regarded as one of the rare pleasures of life. Considered in the light of recreation, and as furnishing adequate means for the expression of the pictorial in nature, and providing an ample field for the exercise of artistic feeling, landscape photography offers perhaps as much in the way of refined enjoyment as any other single branch of art. The ease with which technical skill may be acquired has made it possible for many to be picture makers who were too far advanced in life, or whose time was too limited, to devote the time necessary to the mastery of any of the graphic arts; and the practice of landscape photography has served in many instances to create a desire for the better appreciation and understanding of works of art which heretofore were not able to claim their sympathy.

In the choice of subjects there is scarcely any place that could be mentioned that would be found so poor in pictorial material that it might not by intelligent treatment afford some good compositions for the camera. The power to turn commonplace material into satisfactory pictures is one of the results of a better comprehension of what art is, the faculty of careful discrimination, and a knowledge of the best technical means of turning poor material to pictorial account in the photograph. There is an abundance of material everywhere that could be worked up into satisfactory pictures once the camera worker sets about to discover how it may be done. If amateurs will but take up their cameras again and will make a serious attempt to turn their efforts into pictures, and will persevere, and go forth with renewed interest and endeavor to be picture makers themselves, they will soon be able to claim that enduring compensation which is peculiarly the artist's, and which nature always holds for those who are in sympathy with her moods. A true and sincere study of nature and her works, arising from a genuine love of nature and the effort to transform some of the phases of nature into pictures.



"THERE ARE NO GAME LAWS FOR THOSE WHO HUNT WITH A KODAK."
FROM 1915 KODAK ADVERTISING CONTEST. JAMES J. RYAN,
BERKELEY, R. I.



"BRIGHTEN THE CORNER WHERE YOU ARE." FIRST PRIZE, THE CAMERA
COMPETITION No. 201. W. R. BRADFORD, PHILADELPHIA

HOW TO MAKE LANTERN SLIDES

GEORGE MULLER, JR.

THE first thing in making lantern slides is to decide what method you wish to use, contact or reduction. The latter method is by far the best to use. By contact your work is limited according to your negative and the results are not as good as by reduction.

For contact work an ordinary printing frame is used in making the prints or slides. The negative is limited in size, as the lantern slide is $3\frac{1}{4} \times 4$ inches, therefore a negative not larger than 4×5 or smaller than $3\frac{1}{4} \times 4\frac{1}{4}$ inches cannot be used very well. Place the negative in the printing frame, film side up and place slide in contact with negative, film to film. Hold in front of a safe orange light. You can now see the picture through the glass side of the slide. Shift the slide on the negative in order to find the part of the negative wanted, and clamp. Expose to the printing light, Welsbach mantle, electric arc, etc., and give a very short exposure, say about 4 seconds, 4 feet from the light. The exact exposure is only found out by making a test slide, noting the density of the negative.

Reduction

Reduction is really the only method to use for serious work. An excellent light is the Cooper Hewitt mercury tubes. It gives a very even and steady light with little heat. The arc light gives a great amount of heat and is constantly flickering and gives no end of trouble. The frequent change of carbons, cleaning the globes, burnt out coil wire, is not all the trouble it gives. Being a small intense flame, it is also necessary to procure a condenser to diffuse and equalize the light. Therefore, from experience, don't use the arc light.

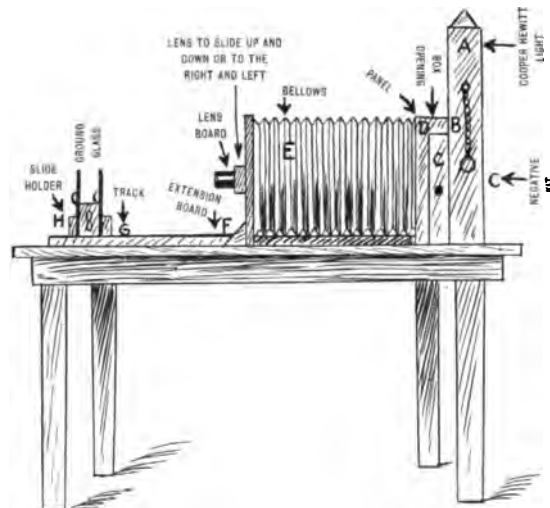


FIG. 1.—REDUCING CAMERA

Focusing

Exposure

FIG. 11—SLIDE HOLDER FOR FOCUSING

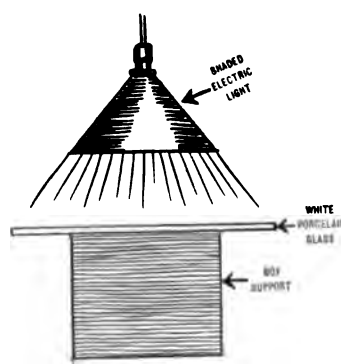


FIG. III.—LIGHT FOR REDUCING SLIDES

THIS LIGHT CAN BE USED IN THE DARKROOM WHILE UNEXPOSED SLIDES ARE OUT. IF YELLOW CLOTH IS FASTENED OVER ELECTRIC LIGHT SHADE



"IN A HERD OF HERFORDS." FIRST PRIZE, THE CAMERA BEGINNERS' COMPETITION No. 3. MARTHA CURRY, CAMBRIDGE, MASS.



"MEXICAN BEAUTIES." SECOND PRIZE, THE CAMERA BEGINNERS'
COMPETITION No. 3. MISS A. L. DILLINGER, NEW YORK CITY

expose 4 seconds. Always expose, say 4 seconds, and regulate the exposure by opening and closing the diaphragm of the lens.

Developing

It is not necessary to state what developer to use on lantern slides. Metol, ortol or the one stated on the box, according to one's liking or experience. For the fixing bath, use 1 ounce hypo to about 4 ounces of water. Add 2 drams bisulphite of soda, which cleans the hypo and about 60 minims chrome alum to harden the film. Never put the chrome alum into the hypo before the bisulphite of soda, because if so done, it will make the hypo very muddy. Always rinse off the slide with water before putting it in the hypo. It is better to overtime then to undertime the slides; there is more of a chance to save them by the right manipulation. When undertimed, the slide can be forced, but rarely with good results. If overtimed, develop the slide very dense, as dense as possible, then to be reduced to its proper density.

Reducing

Here is where the secret of success lies, for making good slides; for nearly all slides will improve by reducing. Nearly all plates develop full of abrasion marks, which appear very prominent in the skies. Reducer will remove such marks instantly. The best reducer to use is red prussiate of potassium. Mix a stock solution, say about 1½ ounces of red prussiate to about 10 ounces of water. Use a white enamel or porcelain tray. Pour in about 1 ounce of the solution; 1 ounce of hypo and about 2 ounces of water. By trial you will soon find out what the proper strength is. For a good reducing light, place a sheet of white porcelain glass over a box and have an electric light shining down on the porcelain glass. (See drawing, Fig. 3.) Place the slides to be reduced in the hypo box and reduce them without washing off the hypo, as hypo is very necessary, for without it the slides will stain yellow. Reduce the slide by dipping a small tuft of cotton in the reducer, and wipe over the parts of the slide that need reducing. To stop the action of the reducer, hold the slide under running water. Wash the slides fully an hour in running water. Place on a wooden slide rack to dry, having the film facing all one way. This is necessary, as the slides will dry much more quickly and evenly. When dry, mat and bind the usual way.

Cover Glass

On account of the present war, it is very hard and expensive to secure Belgian cover glass, (which is far superior to the American article, sorry to say,) so do not throw any spoiled slides away. The films can be easily removed, by using either hot water or hydrochloric acid, which is quite inexpensive, or best of all, a solution of lye and water.



WHAT DOES THE LENS DO?

TO the beginner there is considerable mystery about the lens. He is distracted with the discussion about conjugate focus, working aperture, $f16$, etc., circle of confusion, parallel and oblique rays, and so on, until he begins to think it is a thing fearfully and wonderfully made, and something which takes an education to work it.

True, a lens, especially some of our modern forms of it, implies some knowledge as to its proper use, but there is a good deal of unnecessary "palaver" about it which is apt to distract the beginner. Let us go over the matter of what this focus means, and see how an image is formed upon the ground-glass of the camera by the lens.

The parallel rays you hear so much talk about in every talk about lenses have nothing to do with "focus." Parallel rays cannot come to focus or meet as you must naturally perceive. Very few, indeed, enter the lens when at work. The image or picture on your ground-glass is formed by the same kind of rays which make the picture upon the retina of your eye. Your eye is really a camera with a lens in front. Take an ordinary view outside of your window. All the objects in the scene before you send out rays in every direction, but only a certain number of these rays reaches your lens. From any one object the rays proceeding form a cone of light, the base of which is the opening of the lens, and the apex the object from whence the rays start. Each of these cones of light gets bent, or refracted, as it is scientifically called, on passing the front system of the lens, and is brought to a point or focus, which is the apex of another cone like the first, but its base is now the rear of the lens. Suppose you have, for instance, a ten-inch focus lens, what does this mean? Merely that the front combination of the lens working separately will have a focal distance of twenty inches. All the rays coming from an infinite point are brought to focus at their corresponding point on the ground-glass, twenty inches from the lens if it is a symmetrical one.

Objects nearer than an infinite distance send rays which strike the lens at a different angle. The closer they are, the smaller is this angle to the lens surface. You will also note that the closer up objects are to the lens, the fewer are the rays they send to the lens. These cones of light thus striking the lens at different angles result in their leaving the lens also at a different angle, and so there can be no common point or focus where they meet behind the lens. That is, the picture is in parts out of focus or indistinct. Hence, the objects at varying distances show up on different planes on the ground-glass.

Now let us see what further takes place. What does the back combination do? The rays which have passed through the front lens have been bent or refracted, as shown above, and when they enter the rear system of the lens, they go through the same process of refraction or bending. In our ten-inch lens they meet in a new focus ten inches behind the center of the lens. The image of the front lens has been reduced one-half in linear measure, and, hence, one-quarter in area. The second lens, therefore, makes use of what the



"THE LESSON." THIRD PRIZE, THE CAMERA COMPETITION NO. 201
GEORGE C. WEBB, WEST COLLINGSWOOD, N. J.

front lens furnishes, but by concentrating the image of the first lens, it concentrates the light forming this image four times, because it reduces it to one-fourth its dimensions. It is four times as bright and requires only one-fourth the exposure necessary for the single lens. We tried to show how the picture is produced on the ground-glass by the rays proceeding from the various points meeting in corresponding planes of focus. Now let us consider one of these cones of light. The rays forming the outer surface of the cone strike the lens near its outer margin, and, hence, are called marginal rays, but the interior rays enter through the center of the lens, and are called central rays. These central rays enter more directly parallel than do the marginal rays, and so they come to a sharper focus. The outer rays enter at different angles, and are not bent or refracted as evenly as the central rays. They cross each other in front or at the back of the ground-glass, and this makes a sort of confusion in the image, and, hence, the necessity of excluding them as much as possible. This shutting out of the marginal rays is effected by cutting down the aperture of the lens, which is done by putting in a stop, the central rays thus having the advantage, make the image sharper or more distinct. Of course this causes a loss of light, but it has its advantage.

SEPIA AND WARM BLACK TONES ON BROMIDES—W. G. HILL

THE great number of formulæ that have appeared from time to time for toning bromide prints red or brown, indicates, in a measure, the popularity both of the bromide process and the warm-toned print.

No method appears to be so universally employed as the sulphiding process, although the copper and uranium toning baths both give beautiful variations to tone.

The former in particular is capable of giving a fine warm black if the toning action is stopped at the right moment. Prolonged action produces red tones.

The toning bath is composed of:—

(1)—Sulphate of copper.....	30 gr.
Potassium citrate (neutral).....	120 gr.
Water.....	10 oz.
(2)—Potassium ferricyanide.....	25 gr.
Potassium citrate (neutral).....	120 gr.
Water.....	10 oz.

For use, mix equal parts of each and add an equal quantity of water.

In this toning bath the action proceeds slowly, so that the alteration in color can be noted. Toning should be conducted in daylight, and the print removed as soon as the black tones of the picture appear to get warmer in color. Prints on "toned" or "cream crayon" bromide paper are best for this

method, and the results are very rich when dry, especially if treated with a little cerate paste to brighten the shadows.

Another method of obtaining rich brown tones tending to red is with the sulpho-antimoniate toning bath. This process—one of the earliest methods of sulphiding bromide prints—was first published, I believe, in the *British Journal Almanac*, in 1895. Since then the use of this salt, either alone or in conjunction with sodium or ammonium sulphide, has been occasionally recommended. The process, in this case, consists of bleaching the prints in one of the usual bleaching baths, such as:—

Potassium ferri-cyanide	10 gr.
Potassium bromide	10 gr.
Water	1 oz.

An enormous range of tones can then be produced by "toning" in:—

(A)—Pure sodium sulphide	½ oz.
Water	10 oz.

and

(B)—Sulpho-antimoniate of soda (Schlippe's salt)	½ oz.
Water	10 oz.

If the bleached print is redeveloped or "toned" in (A) alone, the familiar sulphide tones are produced. If toned in (B) alone, a ruddy brown color is the result.

The following combinations should now be tried, and the range of colors noted for future use:—

- 1.—(A) 3 parts, (B) 1 part, water 20 parts.
- 2.—(A) 2 parts, (B) 2 parts, water 20 parts.
- 3.—(A) 1 part, (B) 3 parts, water 20 parts.

It will be found, however, that the tone and color of the original bromide print will also greatly affect the resulting brown or red color. A weak grey bromide print will never give a full rich brown with the sulphide bath, whereas the stronger the bromide print the stronger the brown tones will be.

Bennett's method of sulphide toning should not be lost sight of when very rich tones are required. Mr. Bennett adds a little of the following solution to the bleaching bath:—

Mercuric chloride	¼ oz.
Potassium bromide	¼ oz.
Water	9 oz.

Forty minims of this solution are added to the bleaching bath given above. This addition of mercury renders the resulting tones colder, and if the quantity of mercury is increased, the color can be so darkened that the resulting print is of a rich engraving black. This bath acts also as an intensifier, so is particularly applicable to the thin type of bromide print before mentioned.

In amateur portraiture, one of the most frequent sources of trouble is certainly in the control of the background and in obtaining the desired degree of contrast and relief of the figure from it.

One often gets either too much or too little contrast, and it is in the latter case where the two-color method comes to the aid of the worker most effectively.

The reasons for the difficulty are twofold. One is that the amateur worker usually has to use some material other than a proper background. The other is that, if possessing the proper article, he has to make the one do for all subjects.

In a fair sized studio one can, of course, control the light both on the sitter and background, but working, as most amateurs have to, in a room considerably smaller than one would like, the difficulty of properly lighting the model is sufficient in itself; besides, the occasional portraitist or figure worker is apt to overlook the fact that, although the flesh tones stand out distinctly enough from the surrounding dull grey or slate color on the ground-glass, they do not always do so in the resulting negative and print when reduced to monochrome. Even orthonon plates cannot always overcome this difficulty.

It is here that the sulphide toning process comes to our aid, and especially where many duplicates are not required. The reproduction, however, is likely to give an exaggerated contrast round the outlines of the figure, owing to the overlapping of the printing blocks.

We must use an agent by means of which the toning is carried to its full limit, otherwise we could not obtain an even color.

For this purpose the sulphide method is the best, as we can go carefully over the parts to be toned with a brush, and, however long we are—in reason—between bleaching one part and another, they will both tone to the same color when darkened again.

I find the ozobrome bleaching solution works very successfully for these subjects, and it is also expeditious, as it is put up in concentrated solution, and only requires diluting to be immediately ready.

Perhaps if I give my own method of procedure it may demonstrate the working of the process in the clearest way.

To start with, one requires a thoroughly washed and dried bromide print of good quality. Why dry? For this important reason: if contrast between the figure and background is lacking—and this is the class of prints which is under discussion—before we start to bleach we carefully trace round the outline of the model lightly with a fairly hard pencil.

If this is not done, one will find that as the bleaching goes on it is very hard to tell whether we are overstepping the proper outline, as, where the developed print is of a delicate character, there is not that visible light brown image left after bleaching as in a print of a vigorous or contrasty nature.

After outlining, soak the print for a few minutes, then, placing it on a sheet of glass or other flat support, mop off the surplus moisture with a good-sized plug of absorbent cotton.

If still rather too moist, dab with a piece of blotting paper, but do not, on any account, lay the latter over the print and rub down, or trouble will inevitably ensue.

Now take a small measure and pour into it a little of the bleaching solution, and dilute with *half* the quantity of water quoted in instructions.

This gives us a solution of about double the ordinary working strength.

The reason for this is that unless used very strong the bleaching part of the process becomes tedious, and one is apt to exceed the outlines in attempting to push the action. Go carefully round the margins of the parts to be toned with a moderate-sized brush.

Do not use a very small one, as it will not carry enough solution to act quickly.

After the outlines are done, swab over with the cotton well wetted.

This will arrest any creeping action of the bleacher, otherwise it might encroach on the part to be left black or grey.

It is now easy to complete this part of the process by going over the remaining portions to be bleached with a fully charged brush.

After a few rinses of water, the whole print is then placed in a bath of sodium sulphide, when the bleached parts will come up a sepia tone, leaving the remaining parts unaltered.

It will be at once apparent that the contrast in color makes the blacks and greys appear of a purer and colder color.

If, after drying, the toned parts appear rather too cold in color, a few minutes' immersion in a gold chloride and sulphocyanide of ammonia toning bath, as used for P.O.P. prints, will both add warmth to the toned parts, and make the untoned parts of a more blue-black color.

It is thus apparent that we can by this method obtain any reasonable



A SWISS VILLAGE. DOROTHY DOBBINS, PASADENA, CALIF.

degree of contrast between the flesh tones and drapery or background, at our discretion.

Finally, if the toning be done in the evening by gaslight, on no account use the gold bath to modify the color until the following morning, because when dry, a quite appreciable change is often observable in the warmth of the flesh tones, and if the gaslight should be incandescent, the difference will be more marked still.

It is also better to have no intense white high-lights in the figure part of the print—unless it be the white of the eye, otherwise the toning process cannot convert it into a warm color.—*The Amateur Photographer and Photographic News*.

INCREASING OR REDUCING CONTRAST

RECENT experiments with the newly introduced reducing agents give comparison of the power they have for increasing or reducing contrasts in negatives. As regards the rendering of faint exposures, any developer of the series is as good as the other. The bodies experimented with are pyro, hydroquinone, metol, adurol, edinol, metol-hydroquinone and hydramine. Of the various methods for obtaining a lessened degree of contrast during development, simple dilution with water served for all reducers tried except the hydramine; those least sensitive to such dilution are hydroquinone, metol-hydroquinone, adurol and edinol. Addition of sodium sulphite to the extent of three volumes of 5 per cent. solution is effective for lessened contrast in the case of developers, such as diamidophenol, which work with addition of alkali. The addition of increased amounts of alkali for the same purpose is best applied to pyro, metol and hydroquinone. Increased temperature leads to lessened contrasts only in the case of hydroquinone and adurol, other developers showing very little difference in this respect.

In the case of all the developers, the most effective means of securing greater contrast is found to be by addition of potassium bromide. Those which best lend themselves to this means are pyro-hydroquinone, adurol, glycin and eikonogen.

The diamidophenol developer, according to Professor Namias, is made more sensitive by addition of boracic acid to the restraining action of the bromide of potassium. With boracic acid added the time of development may be reduced to less than one-half otherwise necessary for the given addition of bromide.

Professor Namias has also found that addition of caustic alkali retards the action of the sulphite, whilst carbonate of soda or potassa increase the rapidity of its oxidation. When hydroquinone is mixed with the sulphite of soda, caustic alkali is found to accelerate oxidation; carbonates less so. In the case of the developers, hydroquinone, glycin and metol, it is found that both the sulphite and the developer oxidized more slowly when present together in the solution than when in separate solutions.—*Photo Woche*.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY

THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.

FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription; in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

COMPETITION NO. 201

THE First Award is given to W. R. Bradford for his character study and self-portrait, entitled "Brighten the Corner Where You Are." Mr. Bradford has projected much of his individuality in the subject, and has made his picture not only an epitome of a peculiar phase of humanity by the good characterization of the idiosyncrasy of the class it portrays, but has enlivened it with touches of humor which confer much originality. The particular charm is in the fine dramatic effect and the natural and unconstrained presentation. The character plays its part admirably, and presents the motive in terms which are irresistibly provocative. Aside from the dramatic treatment, the picture possesses many good painting-like qualities. The management of the lines of composition is excellent. The spacing of the figure with relation to the dimensions is well presented, and the subordination of the unessentials, particularly in the treatment of the drapery, shows good taste and artistic judgment.

The Second Award is won by J. Herbert Saunders for "Moonlight," a most charming landscape subject of almost faultless composition, and possessed of a delightful atmospheric effect. It is a little gem which only improves upon closer examination. The perspective is charming, and the treatment of the foreground worthy of the highest commendation, and all this secured by perfect legitimate photographic means.

The Third Award to George C. Webb for his genre study "The Lesson." The figures are excellent, both as elements to effective composition, and in the distribution of light and shade with reference to their relation to the background setting. We have the appropriate relief, obtained by keeping the background in proper subordination, without unduly lessening our interest in the background itself.

Honorable Mention to A. J. Swanson for "Landscape Study." The composition in lines is well sustained. There is a nice balance and distribution of parts which gives good space relation. The perspective is also good, and the curve of the brook, winding imperceptibly into the distance, serves well to lead the eye into the picture.

BEGINNERS' COMPETITION No. 3

FIRST Award is given to Martha Curry for "In a Herd of Herefords," a remarkable grouping of cattle, full of interest and animation, and expressed most artistically. The subject in itself presents many difficulties, but these have all been overcome in the production of a novel and highly artistic picture, worthy of the brush of the painter. Just such animal studies as one meets with in pictures by that famous artist, Rosa Bonheur. The management of the various masses of the subordinate groups, and their association to a pleasing unity becomes more pleasing the longer we dwell upon it. The spacing is well done, and the background setting of the landscape not only most appropriate in itself, but supplementary to the general effect. The character of the lighting is soft and pleasing, and brings out adequately the textural rendering.

The Second Award, to Miss A. L. Dillinger for "Mexican Beauties," is a fine study of dogs, admirably presenting the canine quality, and at the same time enlisting our interest for the characteristic sympathetic way in which they are posed.

The Third Award, to Ralph S. Drake for "At Home," is another good characteristic animal study, presenting the creature in her proper environment, and with a touch of humor which materially adds to the effect.



"LANDSCAPE STUDY." HONORABLE MENTION, THE CAMERA COMPETITION No. 201
A. J. SWANSON, FARIBULT, MINN.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1156. *H. Arimura*.—"Child Study." An excellent study and a first-class photograph. The lighting of the models, both of the living one and the doll, is most pleasing. The poses are most natural and simple and interpretative of childhood. All the accessories are well



No. 1160. *Data*.— $2\frac{1}{4} \times 2\frac{1}{4}$ Icarette; Helios Aplanat lens; $f12$; December 12 o'clock, bright light; 1-25 second exposure; pyro tank developer; enlarging Cyko print.

managed and in keeping with the subject. The picture has a beautiful range of delicate gradations. Altogether a good piece of work technically and artistically.

1157. *Jos. Korte*.—"Home Portrait." A good, home portrait and first-class photographic work. The little boy is posed in a pleasing and natural manner so as to present well the childlike characteristics. The surroundings are also in good keeping with the subject.

1158. *William X. Hull*.—"Sunset on the Atlantic." A pleasing view of considerable artistic merit. The sky perspective is particularly good, and the rendering of the water made to work in harmony with the cloud effect. There is a fine suggestion of distance and recession. We could wish, however, for the exclusion of the tree mass on the left. It too evenly balances the mass on the right, like two equal weights upon a scale. Pictorial effect is better secured when the balance is

had as in the steel-yard, a small mass on the long arm of the lever, balancing the large mass on the shorter end. You notice, if you cover over the projecting mass on the left, how it adds to the effect. The small masses at the lower left corner are almost sufficient to give the desired proper balance.

1159. *Louis C. W. Zobel*.—"West Drive." There is no attempt at composition and no indication of incidents of interest to form a picture. The wide extent of bald foreground of a dark color coming in direct opposition with another mass of blank white space is particularly annoying. We fail to see what attracted you to select such a subject. The roadway might be made interesting by pre-



No. 1157. *Data*.— $4\frac{1}{4} \times 6\frac{1}{2}$ Model XV Conley; R. R. lens; $f11$; December 1 P. M., bright light; $\frac{1}{2}$ second exposure; pyro developer; soft studio Cyko print.

sensation of vehicles or pedestrians, but this stretch of monotony is conspicuous by the absence of all life and action.

1160. *W. J. Simelieus*.—"Snow in the Park." The snowy texture is quite well brought out, and has indication of mass and consistency. It looks like snow, and this appearance, we know from experience, is far from being an easy thing to get in the photograph. The shadows are also good and possess considerable variety, and give pleasing contrast with the high-lights. The trend of



No. 1163. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Korona Petite; R. R. lens; U. S. 8; December 2 P. M., bright light; $\frac{1}{2}$ second exposure; bromide print.

the path is well taken, but we think the picture would be better by the exclusion of the figure in the immediate foreground. The view ought to be quiet there.

1161. *Ford E. Samuel*.—"The Circus Manager." An excellent piece of technical photography, which admirably brings out the textural qualities, and besides, it is a good character study. The background, to be sure, is well associated with the subject, and its relation is properly indicated, but pho-



No. 1165. *Data*.— $2\frac{1}{2} \times 4\frac{1}{4}$ Kodak; R. R. lens; f16; July noon, fair light; instantaneous exposure; Eastman M. Q. developer; Velox print.

tographically, or rather artistically, considered the effect of the strikingly original figure does not demand such a marked contrast. We think the background deprives the subject of the proper atmospheric surrounding. It cuts too pronouncedly against its background.

1162. *O. D. Ellis*.—"A Study." The subject, as far as your poor rendering of it allows us to judge, seems one possessed of good features for pictorial rendering, and so we conclude you have done scant justice to it. In the first place the light is too flat and uniform—no shadows on the face, and the drapery a mere mass of unpleasant white. You could have used the parasol to screen the face, and then have given a little more time to the exposure. Read the paper on outdoor portraiture in *THE CAMERA* for November, 1914.

1163. *Hans Einarson*.—"Interested." The position and action of the child are naturally presented. The little fellow is wholly absorbed in his occupation. The accessories, in the shape of the elaborate carved furniture, are considerably less picturesque than plainer things would be, and particularly so, as the surfaces catch the reflections and form unpleasant high-lights. The print has been developed too far, and is rather flat.

1164. *Francis A. Francis*.—"Afraid." The subject is not interesting, inasmuch as the part which should explain the motive is, in a



No. 1171. *Data*.— $2\frac{1}{2} \times 3\frac{1}{4}$ No. 2 Premo Junior; R. R. lens; U. S. 4; May 10 A. M., dull light; $\frac{1}{2}$ second exposure; Rytol tank developer; Cyko normal print.

good measure, out of the picture. The horse is decapitated and a portion of his hind leg cut off, besides, the animal is much distorted photographically. He looks gigantic, and the movement of your shutter was not quick enough to save the blur in the forelegs. Such a subject under the best conditions is difficult to make interesting, and where it is mutilated as here, it becomes worthless.

1165. *John F. Hunderlack*.—"Lake Louise, Ont." The view is too extended, particularly to the left, thus bringing in the uninteresting mass of dark mountain, which is not only unnecessary for interpretation of the subject, but really detracts from its interest. The foreground, too, may be a convenient place to view the grandeur, but in itself is very unpicturesque. We have ventured to trim out the view, which we think gives a better perspective, and also cuts out the objectionable features.

1166. *C. F. Allen*.—"Mary." You should have given more time to the subject, and then the contrast would have been less pronounced. The mass of undifferentiated white we know to be snow only from the presence of the boy and his sled. That is, we take it for granted, but really it is only white paper. The pose and general management of the little one are excellent. The picture has action, and the pity is that its surroundings are so inadequate to help the interpretation.



No. 1167. *Data*.— $6\frac{1}{2} \times 8\frac{1}{2}$ R. O. Co. view; Zeiss Protar VII lens; December 12.05 P. M., fair light; 4 seconds exposure; pyro developer; Artura print



No. 1169. *Data*.— $3\frac{1}{2} \times 4\frac{1}{2}$ Goerz Dagor lens; U. S. 8; December 11 A. M.; $\frac{1}{2}$ second exposure; pyro developer; glossy Velox print.

1167. *A. Perkins*.—"Brooke." A very good piece of photographic portraiture. The lighting is soft and pleasing, and the shadows on the face skillfully managed to secure a pleasing expression. The background is particularly good and well related so as to give proper relief to the model. The texture of the drapery is well shown, and exhibits a variety of pleasing lights and delicate shadows. The only feature we do not like is shown in the wire-like chair. The lines form unpleasant and too obtrusive attraction to the eye just where the photograph should be quiet.

1168. *J. A. Gohu*.—"Asters." Both the textural value of the flowers and that of the vase are well indicated. The illumination is also excellent, and the shadows particularly rich and varied. Relief, too, is well secured without being too pronounced. The dark background is necessary to bring out the floral quality, but we are inclined to think it is a trifle too contrasty, a little too dark. Had it been more gradated, the effect would not have been so pronounced. The further edges of the table ought to be softened a little, and the cloth itself of a somewhat darker tone. You will notice how much more pleasing the relations are where the vase comes in contact with lace, where it is cast in shadow. Tone down the back part of the tablecloth with grey color and you will see what we mean.

1169. *Frank James Rascovar*.—"Youthful Virtuoso." The figure is good, but the accessories are very poorly managed. We know there is a piano only by implication and by



No. 1174. *Data*.—4 x 5 Seneca "Uno"; Wollensak lens; f16; June 3 P. M., fair light; 10 seconds exposure; metol-hydro developer; Cyko normal print.

the annoying white streak of the keyboard. The contrast is most violent. The coal-black mass against the crude white of the child's frock is most annoying.

1170. *Wm. C. Verburgl*.—"Dog's Head." A fine portrait study of a dog's head, giving adequately the characteristic canine qualities as well as the individuality. The furry texture has all the indications of the original silkiness. The background might have been a trifle darker to give a little more relief to the head, or at least gradated more. It is somewhat too uniform in tone.

1171. *Louis Zobel*.—"The Duck Pond." About one-half of the view is not only useless to the interpretation, but positively injurious. A mere mass of undifferentiated black. There is also considerable unnecessary darkness to the right of the view. The view is improved by simply cutting out the parts indicated.

1172. *E. B. LaSalle*.—"Portrait." Line lighting of the face requires considerable skill to make it effective. Unless properly handled, it is apt to distort the features as your photograph indicates, and so do injustice to a good model, falsifying the expression. The light upon the forehead is too broad, thereby flattening that portion of the face, and where it falls upon the chin it distorts that feature.

The mouth also is ill defined, and the entire shadow side of the face causes the jaw to appear sunk in, and the cheek bone to project abnormally.

1173. *Marguerite Balthorpe*.—"Three Little Kittens." The mistake you make is the attempt to give too much in the picture. The essential feature is in the pretty little group of kittens in the hat, but the position of the hat suggests that the kittens have been put there purposely, and not wandered in the nest. The group is real pleasing and makes us regret that you did not make the photograph as large as the plate space permits.

1174. *S. H. Hill*.—"Looking Out the Window." The head pose of the figure is excellent, but the body does not well accord with it or properly interpret the motive of the picture. The arm hangs too limp and expressionless. The accessories are not well managed. It is unfortunate to have the bar of the sash strike so directly against the chin of the model. The piano, music sheets, and even the fern, are poorly distributed, so as to give unbalance, and besides are in too dark a key.

1175. *M. A. Schammel*.—"The Groves Were God's First Temples." A pleasing study of trees, carrying with the sentiment. The contrast of sinuous and straight lines is quite pleasing, and at the same time perfectly natural. The photographic quality is also good.

1176. *F. H. Stephens*.—"Child Study." A charming picture of a child. The portrait



No. 1176. *Data*.—8 x 10 Century; Wollensak lens; f8; November 10 A. M., good light; 2 seconds exposure; pyro developer; Azo print.

perspective is excellent, there is not the slightest distortion of the features. The pose of the head upon the shoulders is natural and delightful, and the expression all that could be desired. A trifle more softness in the lighting would have added to its many good features.

1177. *O. L. Vollen*.—"River Path." This is a pleasing bit of composition, and gives evidence of artistic taste and feeling, an agreeable contrast and combination of curves and straight lines, and a nice variety of light and shade, and a good range of gradation. The perspective is well managed, and the different masses put into good relation with each other; that is, the picture has good balance.

1178. *B. A. Teagle*.—"Coachella Valley." An interesting picture from a geographical or botanical point of view, and a most excellent technical photograph. The pictorial portion is confined to the right end of the subject.

1179. *Dr. W. E. Ziegenfuss*.—"The River Rouge." A pleasing subject, which brings out well the two planes of a picture, the foreground and middle distance. The third plane, the distance, is unfortunately not present, and, hence, the view has a rather shut-in appearance. If we only had a little glimpse of the far-off, it would give a beautiful effect in conjunction with the other excellent features of the picture. The foreground is particularly pleasing and interesting without being made too pronounced, and the winding course of the stream delightful.

1180. *J. H. Weiner*.—"Playmates." Quite a pleasing child study, and possessed of considerable pictorial merit. The little boy and dog companion play their parts well, because they act naturally, and the good judgment of the photographer is exhibited by his waiting for the moment when the little boy showed his supreme delight in his performance.



No. 1178. Data.— $3\frac{1}{4} \times 5\frac{1}{2}$ Kodak; B. & L. lens; f/16; February 12.30 P. M., good light; 1-25 second exposure; pyro tank developer; Velox M. Q. print.

1181. *Lloyd Follmer*.—"Katherine." The light under which the photograph was taken was too intense, causing an annoyance to the little model, thereby spoiling what would have otherwise been a pleasing expression. There is no data furnished as to time of day or exposure, but we infer from conditions



No. 1186. No data.

indicated that the hour was too near the meridian. Had you selected a time early in forenoon or late afternoon, or have screened the light, the results would have been more pleasing.

1182. *J. M. Pierce*.—"Bridal Veil." The subject is a pleasing one, and the photographic reproduction indicates the good features of the scene. The textural rendering of the rocks and the peculiar character of the dashing water and swirl of the rapids are finely brought out. The roadway picture, unless the object was to show the excellency of the road, would be artistically improved by a little trimming to exclude the bare poles and cross sign to the right.

1183. *Vereh Burtch*.—"When the Road Breaks Over the Hill." Both to the right and to the left of your photograph. You have included too much in the view, which parts not only have nothing of interest in them to warrant their inclusion, but which are hurtful to the effect by their presence. By simply trimming the print, you may notice how you get rid of a mere mass of black, improve the perspective of the picture and give the view at the same time the balance in the composition which it did not have untrimmed. Note how much more depth the view has by this simple operation.



No. 1188. *Data*.—5 x 7 Empire State; anastigmat lens; full open; January 12.30 (midnight); 12 minutes exposure; pyro soda developer; contrast Cyko print.

1184. *Lawson Wehrman*.—"Evening." The upper portion of the view is pleasing in line, but the lower portion is so intense that it spoils the good features in the view, and it is not possible here to make any improvement by cutting off this objectionable part as this portion is necessary to the composition.

1185. *Robt. H. Kroeger*.—"Japanese Garden." The subject is well taken, though not of particular interest as a picture. The lighting is too uniform and flat, all of one tone unrelieved by shadows. The time of day selected was most unfavorable. You lose the nice relief of one mass against the other, which would have been secured had you selected the earlier hours of the morning or later in the day. So near noontime is unfavorable to pictorial making with the camera.

1186. *H. J. Weber*.—"Pals." A very pleasing portrait as far as the lighting and association of background is concerned. The atmospheric relief is good, giving a nice rotundity to the heads without the overdoing of the effect to the extent of stereoscopic appearance. We would have enjoyed the portrait the more had you confined your work to the subject at the back. It is a most pleasing study, but too much interfered with by the head in front, which though a good subject in itself, really detracts from the other because it spoils the composition, and attracts too definitely the eye at the first glance. The composition ought to be quiet and reserved

just where it occupies the space. The vignetting is so good that we cannot help deploring the intrusion mentioned. We hope to see more of your work, as this gives evidence of much artistic taste, and that is the reason why we have been severe in our criticism.

1187. *G. W. Meyers*.—"La Platte River." A picture of such small dimensions has to present features of sufficient interest and prominence to make the microscopic examination demanded to study out what it means. It must strike the eye like a miniature, and not be overloaded with unessential minutæ. There is nothing interesting in such a view, even if expressed in bigger terms, and it becomes practically exasperating when one is asked to make an effort to study it out.

1188. *William Hummel*.—"Frost Spirit." A pleasing picture with the sentiment well expressed, and with all the effect of a good etching. The shadows are particularly fine, and the impression produced is novel, and possessed of artistic character.

1189. *Saul Cabow*.—"Sunrise." We are not like Dr. Samuel Johnson, who made an effort during his long life to get up in time to see a sunrise, but the allurements of Momus were too great to ever permit him to enjoy this beautiful phenomenon. We have, on the contrary, frequently experienced the delight, but in all our participation in Sol's advent, we confess we never saw his procession in the way your photograph exhibits it. It suggests night's black pageant. We do not question the actual pointing of the camera upon a sunrise, but a picture must interpret its motive, and yours does not. Try something less ambitious until your skill warrants an attempt in this direction, which demands much experience and artistic judgment.



No. 1191. *Data*.—4 x 5 Ansco; R. R. lens; U. S. 32; June 3 P. M., bright light; 1-5 second exposure; M. Q. developer; Azo E hard print.

1190. *Marvin W. Jared*.—"Portrait." The lighting is too harsh and contrasty, making unpleasant high-lights and abrupt shadows upon the face. The accessories are poorly

arranged. The mass of manuscripts on top of the desk are unnecessary, besides presenting a mass of unpleasant white just where repose is demanded pictorially.

1191. *Roy Walden*.—"Scenes of Our Childhood." You are correct in your self criticism as regards the unsightly trio, but we think it was possible to avoid it in the scene. It comes too directly in the centre. If you divide the picture by a vertical line, and so bring the trunk to the edge, the part of the view to the right is made more pleasing, because the tree here does not exclusively engage attention, being relegated to a less conspicuous place. The portion to the left is also benefitted in its isolation. This would be quite pleasing had you introduced a boat or something to balance the view toward the lower left corner.

1192. *E. O. Carpenter*.—"Hudson River." Your photograph has a painter-like quality which is most pleasing. The composition is excellent, and there is a nice balance of the masses and a good range of light and shade. You have caught well the action of the water, especially the break against the rocks. There is good suggestion of movement and the water has the right mobile quality. Your point of view is especially well selected and the horizon line well taken so as to give the eye the proper distance of view. We have chosen the lighter of the prints for the better rendition of the half-tones in it.



No. 1193. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Folding Brownie; U. S. 64; January 2.30 P. M., 8 seconds exposure; M. Q. developer; velvet Velox print.

1193. *S. L. Burrough*.—"Quaker Lady." The figure is good; a little formal, but that is well in accord with the subject, but it is also indicative of some constraint and self-consciousness on the part of the model. The accessories are not well managed to make good composition. The figure is cut off too much at the floor-line, more foreground should be shown so as to give some depth to the room. The glimpse of the window and the picture are in the wrong place. The lighting would suggest the other side, and besides they come unpleasantly against the head.



No. 1195. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Special Kodak; Zeiss Anastigmat lens; $f/6.3$; November 3.30 P. M., very good light; 1-5 second exposure; M. Q. developer; Azo F hard print.

1194. *Grace C. Elmore*.—"Home Portrait." The general management of the head is good, but the lighting is a little too flat and not sufficiently relieved. The face is too much in shadow. It needs a few touches of high-light on the forehead along the line of the nose and upon the chin. You will notice that the tone of the drapery is the same as that of the hair and the flesh. There ought to be indicated the textural qualities of both which are materially difficult in Nature.

1195. *Dr. J. M. Pierce*.—"November Shadows." Excellent in photographic quality. The roadway is nicely diversified by the flecked-shadows, and the curve is quite effective in carrying the eye into the perspective. An improvement might be effected by cutting off the poles at the extreme right and also by a little trimming at the other end.

WINNERS IN THE 1915 KODAK ADVERTISING CONTEST

Class I.

First Prize—W. B. Stage, New York.

Second Prize—Geo. J. Botto, New York.

Class II.

First Prize—H. V. Roberts, Utica, N. Y.

Second Prize—W. B. Stage, New York.

Class III.

First Prize—John Balbridge, Waldron, Mich.

Second Prize—Jas. J. Ryan, Berkeley, R. I.

Class IV.

First Prize—Julius Schabtach, Buffalo, N. Y.

Second Prize—John S. Neary, Trenton, N. J.

Class V.

First Prize—Chas. E. Mace, Estes Park, Colo.

Second Prize—Percy DeGaston, Tropic, Calif.

Class VI.

Wm. Shewell Ellis, Philadelphia, Pa.

BUYERS OF PHOTOGRAPHS

Quite a few of the manufacturers of photographic goods are on the market for good and snappy prints and negatives. Naturally the photographs are wanted to show just what can be done with that particular maker's goods you are using. We cannot mention the whole list, but if you will go through the advertising pages of *THE CAMERA* you will find many probable buyers.

Do not send negatives, but make a good print and submit it. Of course, put your name on the print or prints submitted and enclose return postage. Full data is also required.

We append a few names and tell what is wanted:

ALLISON & HADAWAY CORPORATION, 235 Fifth Avenue, New York. Pictures made on the A. & H. brand of Marion plates.

ANSCO COMPANY, Binghamton, N. Y. Photographs made with Ansco cameras, Ansco film and Cyko paper.

BAUSCH & LOMB OPTICAL COMPANY, 623 St. Paul Street, Rochester, N. Y. Negatives made with B. & L.-Zeiss Tessar, Convertible Protars or Wide-Angle lenses, also Telephoto work.

BURKE & JAMES, INC., 242 East Ontario Street, Chicago. Negatives made with Ingento cameras, also negatives suitable to make sample prints on Rexo paper.

G. CRAMER DRY PLATE COMPANY, St. Louis, Mo. Negatives made on Cramer plates.

EASTMAN KODAK COMPANY (Advertising Department), Rochester, N. Y. Pictures made with a Kodak or a Premo and on Eastman film, or on any of the Eastman products.

FOLMER & SCHWING DIVISION, EASTMAN KODAK COMPANY, Rochester, N. Y. Pictures on either plates or films made with Graflex cameras.

C. P. GOERZ AMERICAN OPTICAL COMPANY, 319½ East Thirty-fourth Street, New York. Pictures made with Goerz cameras, or any of the Goerz lenses—Dagor, Syntor or Celor.

HAMMER DRY PLATE COMPANY, St. Louis, Mo. Negatives made on Hammer plates.

ILEX OPTICAL COMPANY, 615 Ilex Circle, Rochester, N. Y. Examples of work made with the Ilex shutters.

IMPERIAL BRASS MANUFACTURING CO., 1205 West Harrison Street, Chicago. Pictures made with the Imp Flashlite Gun.

INTERNATIONAL PHOTO SALES CORPORATION, 11 East Fortieth Street, New York. Photographs made with the Ipsco Reflex or Ica cameras.

W. J. LAFBURY COMPANY, 305 North Fifth Avenue, Chicago. Photographs made with Rodenstock lenses.

PINKHAM & SMITH, 288 Boylston Street, Boston, Mass. Pictures made with the Smith soft focus lenses.

PROSCH MANUFACTURING COMPANY, 213 Pearl Street, New York. Pictures made with Prosch flashlight powder or envelope cartridges.

JAMES H. SMITH & SONS CO., 3543 Cottage Grove Avenue, Chicago. Pictures made with Actino Flash Cartridges.

VOIGTLANDER & SOHN, 240 East Ontario Street, Chicago. Pictures made with the Dynar or Collinear lenses.

WOLLENSAK OPTICAL COMPANY, Rochester, N. Y. Pictures made with Wollensak lenses: Verito, Velostigmat, Vinco anastigmats, the new f7.5 anastigmat or Velostigmat wide-angle, or any of the Wollensak lenses.

TEMPERATURE IN TONING

The effect of temperature upon the resulting tone of the photographic image, where gold is the agent employed in the operation of toning printed-out copies, has long been recognized, but its influence is not so generally appreciated where the basis upon which the toner acts is not a printed-out image, but a developed one, as in the case of bromide and Velox prints.

We well understand, for example, how in the case of the uranium toner and iron-blue process of toning the character of the tone is modified according to the time the print is allowed to remain in the solutions, but the importance of temperature as a factor is generally overlooked. Uranium toning, where uranium nitrate and potassium ferri-cyanide constitute the ingredients of the toning bath is less responsive to changes of temperature than the iron-toning bath.

Let us take, for instance, the well-known formula for iron toner. A 1 per cent solution ammonia iron citrate, 3½ ounces; 1 per cent solution ferri-cyanide potassium, 3½ ounces; 5 per cent solution citric acid, 1 ounce, and it will be found that with low temperature of the solutions the process does not proceed regularly and uniformly. One gets, besides, a disagreeable grey-blue tone instead of the rich tone expected, and, moreover, there is a liability of the staining of the whites of the image and the general background of the picture, if not a precipitate of the particles of the toning solution, a deposit weakening to the integrity of its action. The expectation of permanency of tone is also defeated when the tone is effected under such conditions of low temperature. Hence, the advantage secured by keeping the temperature of the bath to the degree proper for effective action. But, on the other hand, one must be cautious not to go to extremes and elevate the temperature inordinately, inasmuch as too elevated a temperature transforms the beautiful blue tone into a green, which, though not objectionable, may not be what one particularly desires, and which probably is not as durable as the blue tone.—*Photo-Rundschau*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

The advertising field offers abundant opportunities to the independent cinematographer. Take, for instance, the manufacturer. His trade-mark is just the very thing for pictorial treatment and a film boosting his branded article will act as a warning to the public not to accept substitutes. Catch phrases are also good film subjects.

He may like to reveal the manufacturing side of his products, show the care with which they are turned out, the size of the plant, how admirably situated it is, and how the health and interest of employees are studied.

Behind many commercial undertakings there is romance. It is quite possible that these romantic stories are not appreciated until you come along and utilize them. The lifelike stories at the motion picture theater are what has made the industry what it is today, and it therefore stands to reason that a real life story would have a better appealing power.

The real estate dealer can find no more attractive way of selling land and property than by the film. He will save the prospector much time and money and gain his gratitude by not sending him on a fruitless journey.

City boosters and Chambers of Commerce need not compel the spectator to imagine things. By the film he sees them before his own eyes and can size up whether the undeveloped territory or pleasure resort is worth while.

A society could secure a better response to its charitable appeals were it to acquaint the public by a short film with the good work they are doing.

A railroad or rapid transit company might like to bring out the reasons why the public should patronize their line. The film can also boost the "safety first" movement.

The retailer in a large business would find a short comedy, set amid familiar local settings, a profitable investment.

The above methods have been tried and proven, so you should find it much easier to obtain assignments.

Before submitting an estimate, you should go over the field and find out from the manufacturer what phases of the manufacturing process he wants covered and the particular points emphasized. With this information you may draft a scenario, allowing one or more scenes to each process, according to the area it covers. The length of each scene will depend upon its importance.

For a minor detail you will perhaps plan to "shoot" a twenty-foot scene, and for an important process you may run up to fifty feet for a single scene.

You must allow film to carry sub-titles, for each process must be preceded by a few words of explanation in direct and simple language. Each word thus consumes one foot of film. These details settled, you will be able to estimate the approximate length and cost of the entire production.

You should value your time at from ten to twenty dollars per day, and this has to be allowed for, even if weather conditions should delay the work of production.

Lighting conditions within the plant may be unsuitable for photographic purposes, and you will have to figure on installing a portable electric-lighting outfit for the work. Charge fifty cents per foot for the scenes in which it is used.

For the rest, you must figure on the cost of the raw stock, waste footage, the work of developing negatives and printing positives, office expense and other overhead incidentals, and last, but not least, your own legitimate profit.

The average commercial producer charges about fifty cents per foot, or one hundred dollars in the case of a one-reel production. This covers the expense of producing and developing the negative; for such positives as are needed, ten cents per foot is charged.

The figures given refer to the cost of a film that deals with inanimate subjects, such as views of a rolling mill or any type of manufacturing plant. Sometimes, however, a comedy or dramatic photoplay can be made to serve an industrial purpose, and many concerns have adopted this plan. In such cases, of course, the plant is used as the background for the story and the product or processes of manufacture are woven into the theme.

This kind of film is more involved and expensive than the first one described. The first essential is a good story, and to write this you must have a keen appreciation for advertising values in a dramatic plot.

Then a capable cast of actors and a talented director are needed if it is to be given a distinct professional touch. It is probable that you will not be able to use the interior of the plant for some of the scenes, which will have to be staged in the studio.

The cost of producing such a photo-play varies with different conditions encountered,

but you should not find it impossible to provide all the essentials mentioned at a cost somewhere between \$1.25 and \$3.00 a foot. This works out a cost of from \$50 to \$3,000 for producing the negative of a single-reel subject.

Whatever you do, it may boost your banking account to charge for superfluous footage, but it harms your client to an extent not represented by the extra cost. A commercial film depends for success upon snappy action, and an unduly drawn-out spectacle cannot hold the interest of an audience.

But you cannot avoid waste footage. A film is like an important letter or magazine story; it must be carefully trimmed before it is sent out into the world.

I had a reason for detaining Edward Earle one afternoon as he was about to leave the Edison Studio. You see, I was anxious to obtain the photo-player's viewpoint of the educational film.

"Do you believe the educational interferes with the regular photo-play?" I commenced.

"To me," promptly responded Mr. Earle, "the educational fills a niche, for the ideal photo-play theater program should contain a little of everything."

"Should 'educational' be served up like sugar-coated pills?" I next ventured.

"You refer to that kind of educational in which either the comedy or dramatic element figures, don't you? I disapprove of them, as the stories are 'pot boilers,' weak in plot and tend to lower the dramatic standard of the regular photo-play."

"But these remarks do not apply to the comedy or drama which is first and last what it is intended to be, for the scenario writer has a pleasing knack of injecting educational things into his creations."

"Are there any defects in present day educational?"

"There is a tendency to be sparing with the explanatory matter at the expense of clearness," commented Mr. Earle. "I know that

each word means one foot of film, but it is best to be liberal.

"Another thing, in scenics, and those taken abroad are the worst offenders, we are seldom told where the places are. There should be more of them preceded with a map and pointer to show the territory in question."

"Does the educational affect your work?"

"Yes, but not to a harmful extent. The standard length rule oftentimes compels us to appear at a disadvantage, so when a production is naturally completed in fifteen hundred feet, it is mighty good to know that an educational acts as a 'filler' to the second reel."

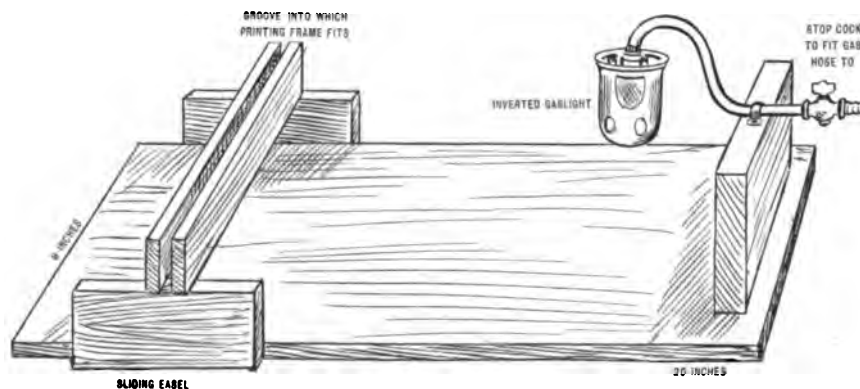
"Should there be separate films produced for educational purposes?"

"A subject might suit both mixed audiences and school pupils," remarked Mr. Earle, "but the treatment for each would have to be entirely different. For the latter purpose it would also be necessary to produce such films along systematic lines, under the supervision of educational authorities."

When I first received tidings of the tiny motion picture camera, invented by Clark Irvine, of Los Angeles, I was under the impression that it was a toy, gotten out for the amusement of children. It was, therefore, a pleasant surprise to receive one of the miniature models and discover that my assumption was incorrect.

The Irvine Movie Mascot, for such is its name, is a perfect counterpart of the regular motion picture camera. It measures scarcely a foot from film box to end of the tripod, and contains a crank, lens, view finder, film meter and the film-box handle. The box, which is of mahogany, is well varnished, and the tripod is made of nickel and steel.

The motion picture colony in Southern California has unanimously adopted this tiny camera as their mascot, and may even be seen attached to the radiator caps of automobiles and on ash and pin trays.



The above illustration was omitted in our February number, describing Mr. Leonard O. Ihland's printing machine on page 98.

PHOTOGRAPHIC DEALERS' ASSOCIATION OF AMERICA

Cleveland will be the Mecca for photographic dealers throughout the country, when the Fourth Annual Convention of the Photographic Dealers' Association of America takes place March 7, 8, and 9, 1916.

Everything is in readiness for the entertainment of all visiting dealers and their wives. Meetings will take place at the Hotel Statler, where a very large meeting-room has been secured by the Association, and after each morning's session a luncheon will be served in a large private dining-room, where interesting talks will also be given by men prominent in the photographic industry.

The Exposition feature of the Convention promises to be larger than ever before and have many more new interesting exhibits which were not shown in New York last year. The exhibitors are now planning their exhibits, and from late reports, there will be considerable rivalry between many of the different exhibitors.

Photographic dealers throughout the country are taking a keen interest in the prize of \$25.00 in gold offered by the Association for the best window display made during the months of January or February. These photographs of window displays will be made into lantern slides, colored, and same will be thrown on a screen in the Convention room where all visiting dealers may obtain excellent ideas on window decorating from these suggestions. This feature of the program has created considerable interest.

Hundreds of entries for the National Photographic Competition, to be held in connection with the Exposition, have been received from professional and amateur photographers throughout the country, and this competition promises to be the largest and most complete ever held in this country. Many camera clubs will send in group entries by their members. All photographers anxious to enter in this competition, for which \$200.00 in gold will be awarded as prizes, should write at once to the Photographic Dealers' Association of America, whose headquarters are at 241 Engineers Building, Cleveland, Ohio.

Mr. H. M. Fowler, President of the Association, reports a very favorable response on the part of photographic dealers within a radius of 500 miles of Cleveland, who are planning to come to Cleveland for this Convention.

The program, as arranged, will include many talks and discussions, and no progressive, photographic dealer can afford to miss this important meeting. This Convention is for all dealers from all parts of the country, and as the business of the dealers is in the stage of wholesome development, it is well to profit by the experience of others, and develop it along the lines that have proved safest and best. There is also need for co-operation and confidence in each other, if the dealers are to

carry their business on to a healthy and profitable position. The future will require all of the skill that the business man possesses, and the better he is equipped to meet new conditions, the better will his business be.

Every dealer is urged to bring his wife, as a Ladies' Committee has been arranged for by the Cleveland Dealers to take care of all wives of visiting dealers. Special programs have been arranged for them during their stay in Cleveland.

Program of the Convention will be as follows:

TUESDAY, MARCH 7th, 9.30 A. M.

Address of Welcome—Hon. Harry L. Davis, Mayor of Cleveland.

Response—F. E. Gatchel, Louisville, Ky.

President Fowler's Address.

Secretary's Report.

Treasurer's Report.

Appointment of Nominating Committee.

Appointment of Committee for place of next meeting.

Appointment of Resolution Committee.

Appointment of Manufacturers' Committee.

Report of Developing and Printing Committee.

(Best methods of conducting a developing and printing department. Economics in Amateur finishing.)

J. Wesley Allison, New York, Chairman.

"The Proper Compensation of the Store Salesman"—Mr. Chas. Huesgen, New York City.

(To be followed by general discussion)

"Profits"—Address by J. J. Wood, President of the Burrows Bros. Co., Cleveland.

LUNCHEON, 12 o'clock

Speaker—D. E. Agler, Van Wert, Ohio.

Topic—"The Photographer and the Dealer."

AFTERNOON AND EVENING

Exposition of Photographic Arts and Industries.

Coliseum, 1 to 11 P. M.

WEDNESDAY, MARCH 8th, 9.30 A. M.

Window Decorating Suggestions with Stereopticon Slides. (Followed by discussion.)

"The National Photographers' Association and the National Dealers' Association"—Address by L. A. Dozer, President Photographers' Association of America.

"The Stevens Bill"—Address by Geo. A. Waddle, Counsel Goodyear Tire and Rubber Co., Akron, O.

LUNCHEON, 12 o'clock

"Advertising"—Dudley Field of the Ansco Company.

AFTERNOON

Exposition of Photographic Arts and Industries.

Coliseum, 1 to 11 P. M.

EVENING

Eight o'clock. Theatre party for members and ladies.

THURSDAY, MARCH 9th, 9.30 A. M.

Report of Manufacturers' Committee.

Practical Stage Demonstration Sale of Photographic Goods.

Unfinished Business.

Report of the Nominating Committee.

Election of Officers.

Report of Committee for place of next meeting.

Awarding of prize for the Window Decorating Competition—\$25.00.

LUNCHEON, 12 o'clock

Speaker—Dr. Wm. T. Stuchell.

Topic—"The New America."

AFTERNOON

Exposition of Photographic Arts and Industries

Coliseum, 1 to 11 P. M.

EVENING

Seven o'clock. Banquet (informal), followed by dancing.

ANNUAL DUES, \$5.00

This includes the three luncheons at the Hotel Statler; theatre party at the Hippodrome, Wednesday evening; banquet and dance at the Hotel Statler, Thursday evening; season ticket for the Exposition of Photographic Arts and Industries, and a printed report of the Convention.

Badges will be furnished to all members, bearing their names, the firms which they represent, and their addresses.

Every photographic dealer intending to go to Cleveland for this Convention and Exposition should write at once to H. M. Fowler, President Photographic Dealers' Association of America, 241 Engineers Building, Cleveland, Ohio, in order that his name may be entered and reservations made for desirable theatre party tickets, and seats at the banquet. Everything will be arranged in advance as far as possible, and the co-operation of the dealers in sending in their applications promptly, will be greatly appreciated by the Association.

STAGMATYPING

When an engraving is examined with a lens, it will be perceived that it contains only two tones—the white of the paper and the color of the ink. In order to produce in a press the appearance of a picture with continuous modeling, it is necessary to have recourse to various artifices. In wood-engraving the artist graduates the half-tones by the closeness and breadth of the lines; in etching or plate-engraving the depth of the cavities modulates those velvety shadows that rejoice the lovers of engravings. Photographic-engraving also realizes this effect in relief-engraving by the interposition of a screen, and in cut-out-engraving by division of the cavities, either with resin-grains or by the size of cross-hatching.

Mr. Hans Strecker has invented a process which permits obtaining directly an engraving of cellular structure on a metallic plate that may be printed typographically or as a line-engraving, with the aid of an ordinary negative, and without the interposition of a screen.

In truth, the application of a sensitive coating to engraving, which takes a grain automatically, is not absolutely new, for more than thirty years ago Placet and Rousselon had already succeeded in doing the same thing, but their methods were never clearly divulged, and certain knacks of manipulation, indispensable for success, remained secret. Besides, at that time there were neither presses nor paper suitable for obtaining good impressions from the very slight relief of these engravings. Their work was, therefore, limited to etched heliogravures, and they were gradually abandoned after Klic had indicated the method of division with grains of resin in 1879. It is, nevertheless, curious to note that in order to obtain constant and regular results, Placet did not use gelatine alone, but added to it a certain amount of gum.

But it is a mixture of gelatine and gum that Mr. Strecker employs. The mixture appears homogeneous to the naked eye, but the microscope shows it to be really an emulsion. If there is not an excess of gum, it can be seen distributed through the gelatinous solution in the form of minute spheres. If some bichromate of potassium is added, the heterogeneous character of the liquid becomes still more apparent. On the one hand the unequal coloring properties of the chrome salt for vegetable and animal colloids increase their differentiation; on the other part the superficial tension of the colloidal particles suffers modification, which strengthens the phenomenon of emulsification and renders it more distinct. The *drops* of gum can then be distinctly seen floating in the gelatine, hence the name *stigmatype* (from the Greek word *stigma*, "little drop"), given by Mr. Strecker to his process of engraving.

The bichromated emulsion, flowed on a metallic plate, dried in the dark, and exposed to light under a negative, becomes more or less impermeable, according to the transparencies of the photo-type. Besides, at every point of the coating the permeability of the gum is not the same as that of the gelatine, so that immersion of the plate in water, or in the etching bath causes the formation of a grain, whose coarseness depends upon the thickness of the coating, and the proportion of gum in the emulsion.

The etching agent, employed to engrave the copper-plate, is perchloride of iron in a more or less concentrated solution. The dried grains of gum arabic resist the action of this solution for a much longer time than the gelatinous vehicle, so that even the most strongly lighted portions of the coating are penetrated by the perchloride of iron before the gum has commenced to absorb the water and become soft. The principle of dividing the image into narrow cells is thus realized in the simplest manner by the grains of gum, which form a reserve, but a reserve more or less complete, according to the degree of impermeability. The result is, in placing it in the etching bath, lines more or less broad, more or less close together and more or less deep, so that the plate, although made from an ordinary negative, is adapted for typographic printing and to printing as an etched engraving.

The specimens of stigmatypes we have seen were printed typographically, and while not perfect, show some superiority over photogravures made with rectilinear screens. From the artistic point of view, indeed, the decomposition in points irregularly distributed is in itself satisfactory, but processes using only a fine grain have only given, so far, hard and confused pictures, while stigmatype produces quite readily a grain that is both very fine and very regular. This grain does not give the disagreeable impression that is produced by the geometrical divisions of the screen when it is not fine enough. Besides, its automatic formation simplifies greatly the

preparation of the plate. In the ordinary operations of photogravure the object to be reproduced is photographed through a screen, and the negative thus obtained is decomposed by the screen over every point of its surface, and every line of the original appears as a series of points. In stigmatyping, on the contrary, an undecomposed negative is used, with continuous half-tones; the result of this is that a black stroke is represented in the reproduction by a complete black line. It thus permits an enrichment of the half-tones in the way of depth—it gives more saturated tones.—*E. Coustel in Revue Photographique du Sud-Est.*

SELECTION OF A SHUTTER

What follows is an attempt to help our readers to decide upon the most suitable form of shutter for the work they wish to do, by pointing out wherein one type is better or worse than another. It must not be supposed that we advocate the focal plane against the diaphragm pattern, or the reverse. Each has its merits and each its defects, and with each plenty of fine work is being done.

Seeking advice on the subject of a shutter is very much like asking a motorist what car to buy. He at once begins to advocate the type he himself has got. No doubt he is honest in his opinion, and got a car of that type because he thought it was the best, but cynics say he often does this because, having made a foolish choice, he is pleased with the thought that others are no wiser than himself. Certainly the photographer with only one shutter is apt to advocate its merits to the exclusion of those of other patterns, and advice in these circumstances becomes unreliable. The writer is the possessor and user of shutters of various patterns, and recognizing that each has its advantages, and that each is, in certain circumstances, the best, he may be better able to review their merits dispassionately than the amateur who is wedded to a single type.

The qualities which the ideal shutter should possess are smoothness of action, even illumination of the plate, simultaneous exposure of the whole plate, maximum efficiency and accurate timing. No shutter possesses all these, or, indeed, comes anywhere near this ideal, nor of the three principal types can it be said that any one is any nearer the ideal than the others. The degree of perfection assigned to each depends on the relative importance that is attached to these different qualities. Let us see for a moment how the different types compare, considering all shutters as coming into three groups—(1) roller-blind on the lens, (2) diaphragm and (3) focal plane shutters.

Taking smoothness of action, the small diaphragm shutters are easily first, the focal plane with their big blinds and comparatively heavy moving parts coming last in this respect. For high speed work smoothness of action is not particularly important, as the

rapidity of the exposure neutralizes any slight jar given to the camera by the shutter. For slow speeds, however, such as those which have to be given with the hand camera for figure work, street scenes, woodland pictures—every hand camera subject except open landscape and water pictures, and instantaneous "tours de force"—smoothness of action is very important, especially in unskilled hands. The consequence is that many who are alive to the great advantages of the reflex camera for work of this kind still prefer to use other patterns because of the smoother movement of the tiny leaves of the diaphragm shutter.

The even illumination of the plate is a quality which is shared pretty much alike by all good shutters, although some of the cheap forms of diaphragm shutters have left something to be desired, and some of those negatives which have a strip of full density down the middle, while they are thin at both ends, undoubtedly owe that defect to a badly designed shutter.

It is the lack of the next quality—simultaneous exposure over the whole plate—which is the weakest point about the focal plane shutter with a narrow slit.

When such a slit passes across the face of the plate one part of the plate is exposed an appreciable time before another part. As the narrow slit is only used for rapidly moving objects, it follows that there must be distortion of the picture.

In a photograph of a rapidly moving motor car, for example, the slit exposes the bottom of the car, let us say, some fraction of a second before it exposes the top. The consequence is that a perfectly vertical line on the car would be rendered sloping, tilted with its upper end in the direction in which the car was moving. If the blind worked in the opposite direction, the slope would be reversed. If the blind, instead of moving up or down, moved across the picture, the side view of the moving car would be distorted by making the car too long in proportion to its height, or too short, dependent upon whether the blind moved in the same direction as the movement of the picture on the plate, or in the opposite direction.

In some subjects such distortion is unimportant; and in all cases in which very short exposures are not required it can be avoided by using a wide slit, getting speed by increasing the tension of the driving spring. Unless the slit is less than a twentieth of the total width of the plate across which it passes, the distortion, although it may be present, is not at all likely to be perceptible.

The greatest merit of the focal plane shutter lies in its efficiency. By this is meant the quantity of light passed by the shutter during the time it is open. If the focal plane shutter were working absolutely on the surface of the plate itself, it would have a theoretically perfect efficiency. That is to say, as long as the plate was uncovered at all it would be

receiving light from the whole of the lens. Actually the shutter is some little distance from the lens, so that this does not quite hold good; but with most properly constructed cameras the falling off is very slight, and the efficiency of the focal plane shutter, as generally used, is somewhere between .9 and .95.

In other words, if the light passed by the theoretically perfect shutter was represented by 10, the light passed by the actual shutter in the same time would be represented by 9 to 9½.

Diaphragm shutters could, no doubt, be made for slow speed work as efficient as this, but none of those on the market approach this, the efficiency of the best not exceeding .5, when used with the lens for which it is designed, at full aperture. This means that to get as fully exposed a plate as we should get with a focal plane shutter with a twentieth of a second with a diaphragm shutter, we should have to give at least a tenth of a second. In actual practice, this is not found to be as serious a drawback as might be supposed, for reasons into which we need not go here; but when all is said and done, it must be looked upon as a very strong point in favor of the focal plane type.

As far as the accuracy of the marking of the shutter is concerned, nearly all forms leave very much to be desired. Many of the diaphragm shutters are so inaccurate as to be quite useless for giving calculated exposures until their speeds have been measured. When this has been done, however, and a note made of the actual speeds represented by the different marks on the scale, such shutters are reasonably reliable. In fact, in use it will be found that they are at least as constant as the focal plane, if not more so. The inaccuracy of the markings on diaphragm shutters is not due to any inherent imperfection in the shutters, but to the pandering of the makers to the demand for shutters graduated to high speeds.

The exposures given with focal plane shutters vary according to the way the shutter is kept, with spring in tension or relaxed; and they vary more than many suspect. Where this type has the advantage, however, is in the reliability of relative exposures. Whatever the speed of the blind may be, we know we can double or halve the exposure with a high degree of accuracy by doubling or halving the width of the slit.—*Photography and Focus*.

A good print may be obtained from a weak negative by placing a light green glass over the printing frame. Naturally, this greatly increases the time of exposure. But there is another plan by which the negative is modified once for all. It consists in immersing the plate for a few seconds in a solution of gray-blue aniline. The color is absorbed in proportion to the amount of silver reduced, and the details, at first invisible, come out plainly and print clearly.—*Ex*.

RECENT PATENTS

Photographic Roll Film.—J. Brewer, New York, N. Y. This improvement provides a film arranged to permit the removal of any one or a number of exposed sections of the film for separately developing such removed section or sections in case the removed sections require more or less time for development than the remaining roll film sections.

Printing Camera.—J. Trimbach, Rye, N. Y. This invention provides a photo printing device which will permit the printing of pictures or photographs from flexible films or photographic plates by artificial light, and in such a manner that a strip of printing wound upon a roll, or otherwise, may be used and brought to printing position without many of the operations and manipulations now necessary in printing with an ordinary printing device.

Shutter Controlling Device.—D. L. Brown, New York, N. Y. This inventor provides a device more especially designed as an auxiliary to the usual hand-controlled shutter-actuating mechanism of the camera, and arranged to allow the person in charge of the camera to move to position in front of the camera with a view of having the person's picture taken either singly or in conjunction with a group.—*Scientific American*.

BRUSH DEVELOPMENT OF BROMIDES

The use of the brush in development is practiced by many who seek for expression of individuality in their work. It enables one to emphasize certain parts or to subordinate others, and so bring the parts of the picture in harmonious relation.

Where the print is of large size, it is decidedly effective. An expert hand may produce charming effects.

The print, after exposure, should be placed in a large porcelain tray a trifle larger than the print itself. Soak it until the film has softened, then drain off well and remove surface moisture with a clean blotter. The developer is made as follows:

A—Hydroquinone	320 grains
Eikonogen	320 grains
Sodium Sulphite, granular .	4 ounces
Citric Acid.....	1 drachm
Water	64 ounces
B—Water	64 ounces
Carbonate Potassium	8 ounces
Sodium Sulphite	2 ounces

Take equal parts A and B, with equal bulk of water and one-eighth bulk of glycerine.

Tilt the dish at an angle of 30 degrees, and brush the exposure rapidly with the brush, managing so as to cover the whole surface.

The image appears slowly and it is quite easy to coax out or keep back portions as desired by application of more or less of developer and friction.

For small areas use a smaller size brush.

DAMAGE DEMANDED FOR LOSS OF FILMS

The following inquiry was made by a correspondent to the editor of the *Photographische Industrie*. The reply is consequently in accordance with the decision of cases of like import coming before German tribunal, and our law may or may not be in conformity to this decision. However, we translate what the editor of *Photographische Industrie* replies:—

"An amateur submitted to a certain firm three rolls of films for development and printing. When he called for his work, he deposed that the negatives and the prints therefrom were not those left with the firm; in other words, were not what he had taken, but someone's else property. He demanded satisfaction for the loss he sustained to the amount of 100 marks and also the expenses incurred in the journey he had taken to secure the negatives. He acknowledged that he was not a professional in the business, but an amateur traveling for pleasure. The firm that occasioned him the loss, offered in compensation the same number of rolls which had been consigned to them and on his maintaining that he possibly might not succeed as well on the second journey in securing results, three additional rolls were also promised."

The editor replies, in accordance, as it seems, with the German law on the subject, that it is preposterous to demand reparation to the extent of the cost of the journey to repeat the operation, unless the conditions under which the exposures were made were of such a character as to prevent a repetition of the same. He can claim only sufficient indemnity to enable some photographer of the locality to reproduce the work, or if this is not possible, the price chargeable for such a performance.

ENAMELING PHOTOGRAPHS

High-gloss surfaces do not seem to attract the present artistic taste among the majority of photographers, but the general public seem to take some pleasure in it, and we have recently had a number of inquiries how to do it.

The gloss has one virtue—it tends to preserve the picture from damp and injurious vapors.

Try the following, which was generally employed some thirty years back, when everybody liked gloss:

Coat a flat glass plate (plate glass is preferable) with plain collodion. You can buy collodion nowadays; in fact, you will be obliged to, as hardly one practical photographer in twenty has seen the product once so essential to the profession.

When the collodion-coated plate is dry—it may be made quite so by holding it to the fire—then pour on a varnish made as follows:

Thirty-eight grains gum juniper, ten grains

gum shellac (orange), five grains of grain resin (fiddle resin), a small piece of gum camphor dissolved in one ounce of strong alcohol, wood alcohol will do.

Pour the varnish over the plate just as you did in coating with the collodion and drain off the surplus at one corner into the bottle. Lay the plate flat on top of a bottle to dry, which is effected in a minute, or so; in fact, it need only dry round the edges.

The prints, having been previously immersed in alcohol, are to be laid face down on the plate and squeegeed, pressing all air holes out and observing that the surfaces are in perfect contact. Put a piece of blotting pad on the prints and over it a flat glass. Place an even weight on the glass. After a while remove the weight and hold near the fire until dry, then take off the glass plate and see if the blotting pad is dry.

To remove the print, cut round it through to the glass with a sharp knife, dip the plate in hot water, and on lifting it out the prints will peel off like the skin from an onion.

This method gives a polish beyond which nothing could be desired.

VARIOUS TONES ON THE SAME PRINT

Platinum prints are often toned in several colors by incorporating glycerine in the toning agent, but it is not, perhaps, generally known that ordinary printing-out-paper pictures may be manipulated so as to get in the one print various colors. Early in the history of print toning, that is, about 1860, it was shown that gold would give quite a range of tones, but it is only recently that a method was devised for getting flesh tones as well as color for the hair, and the drapery was feasible on the same print.

The print to be operated upon must be strongly printed, hence, an image from a plucky negative gives best results—one that may be printed in sunlight. Wash after removal from the frame in several changes of water, then place while still wet in a clean porcelain tray (be sure the dish is clean). It is now in position for working upon. Prepare the following baths:

Gold Bath

A—Gold chloride.....	2 grains
Water.....	1 ounce
B—Water.....	4 ounces
Borax.....	15 grains

Take one dram of the gold solution and add it to the borax solution, use the bath freshly made.

Platinum Bath

Potassio chloro-platinite.....	15 grains
Phosphoric acid.....	1 dram
Water.....	14 ounces

Uranium Bath

A—Nitrate uranium.....	15 grains
Water.....	4 ounces
B—Ferricyanide of Potassium	15 grains
Water.....	4 ounces
Mix immediately before use.	

If, for instance, you have a portrait to color, begin by toning the background with the gold toner, taking care not to encroach upon the area of the face. For this purpose use a fine camel's-hair or sable brush, but not one mounted with metal. After the proper tone has been reached, wash off the print in clear water.

Next tone the hair. If the color is to be auburn, allow the gold bath to ripen, or what is better, have a gold bath for this purpose which is at least a day old.

If brown is wanted, use more gold in the bath, taking care, however, to neutralize the additional gold with the borax. Black hair is obtained by following the gold toning with the platinum bath. When complete wash and fix in hypo, 1 ounce of hypo to 16 ounces of water.

To get flesh tones you must wait till the print is fixed in the hypo. Care must be taken here not to let the uranium bath act too long, else the flesh will come out too dark.

HOW SURGEONS MAY TAKE PHOTOGRAPHS OF OPERATIONS UNASSISTED

A camera so arranged as to permit the immediate photography of surgical operations has been installed in the surgical department of a sanitarium in Battle Creek, Mich. It is placed so that the surgeon himself operates the camera, says the *Popular Science Monthly*.

This device has been found extremely valuable in taking photographs of unusual surgical cases, where a permanent and graphic record of the technic is desired. The camera is attached to a bar which manipulates the lighting of the table, and as it is held perfectly rigid, it in no way interferes with the operation itself. It is always in focus with plates in position, so that the presence of a photographer is not absolutely required.

When the surgeon desires to take a picture of any stage of the operation, he has only to press the bulb and return to his surgical task with but an instant's interruption. After the operation is over the negatives are developed and stereoscopic prints are prepared.

Photographs are not taken of all operations, but many patients request that the photographs be taken, so that they may see how they "look on the inside."

PERMANGANATE REDUCER

The permanganate of potassium has been employed as a reducer for too great intensity, but the modification suggested by Namias offers some peculiar advantages over the older formula. The action consists in a deposition of the manganic oxide over both high-lights and shadows which lessens the contrast in both, but its chief advantage is for local action by means of a brush. The formula he gives is:

Potassium Permanganate	5 grammes.
Water	1000 c.c.m.
Glacial Acetic Acid	5 c.c.m.

VIEWING STEREOSCOPIC PICTURES WITHOUT A STEREOSCOPE

In *Photographische Notizen*, Herren Friedmann and Greiffenstein report a method invented by them for viewing stereoscopic pictures without a stereoscope, by preparing from one-half of the stereo-negative a black and from the other half a white diapositive. If the black diapositive is held over a white background, the picture is seen clearly, while if it is held over a black background it is almost entirely invisible. The same thing occurs with the white diapositive—it is visible over a dark background, and disappears over a white one. If both diapositives are placed over each other and viewed through a white or black background, the white or the black picture is absorbed and the other is visible. If, however, one-half of the background is white and the other half black and placed at a certain distance from the superimposed diapositives, one eye of the person viewing the diapositive from the proper position will see only the white picture, while the other eye sees only the black; thus both pictures are seen at the right distance, forming a correct picture in relief.

By this arrangement, one is actually enabled to view the pictures stereoscopically without the aid of apparatus, in all the plastic beauty as seen through the stereoscope. A number of pictures were shown at the last photographic exhibition in Vienna, but the invention has not yet been sufficiently perfected to place it on the market.



An occasion for diplomacy.—Kodak Salesman.



The cover illustration this month, "The Storm at Weston-Super-Mare," was loaned to us by Allison & Hadaway, Inc., New York City. It was made with a Soho camera, and on the A. & H. brand of Marion & Co.'s P. S. plate.

The scarcity of glass has caused the buyers of old negatives to be extremely liberal in their offers. Grimm Bros., 2921-23 Salena Street, St. Louis, Mo., want all the rejected negatives obtainable. Write for prices and state what you have.

J. W. Johnston of Rochester, N. Y., has sent us several samples of Snow White Water Color that has proven most excellent. We handed the samples to several artist friends, photographers and our photo-engraver, and they speak in the highest praise of it. We find it free-flowing and intense in its color, and admirable wherever a good white paint is needed. It is sold at 25 cents a jar.

Photograms of the Year 1915.—The Annual Review of the World's Pictorial Work. Edited by F. J. Mortimer, F.R.P.S. Tennant & Ward, 103 Park Avenue, New York City, American Agents. Cloth, \$1.75; Paper Covers, \$1.25; post free.

Despite the impediments, incident upon the European War, *Photograms of the Year 1915* is a splendid contribution, evidencing that interest and delight in the beautiful art has in no means been repressed by the world-stirring event. Other departments of art have suffered by decline, but photography is paramount, and there is no falling off in the number or character of the work presented.

Indeed, there seems to have been an over stimulus to effort, as we learn that the space in this excellent periodical publication on art photography would not permit the exhibition of all that was submitted.

Photograms of the Year 1915 is not only the medium for exploitation of pictures by the camera, but is also a channel for expression of opinion and criticism on subjects relative to pictorial photography. It gives contributions from the pen of well-known workers in different quarters of the globe, presenting the status of the art in their respective countries which are most interesting and valuable. There are over 75 beautiful reproductions, embracing landscape, portraiture and genre, which form valuable object lessons to all students of pictorial effect.

San Francisco, Cal., Feb. 4, 1916.

Dear Sir:—Received set of "Library of Amateur Photography" all O. K. Am well pleased.

JOHN J. FRIEDRICKS.

Minneapolis, Minn., Feb. 12, 1916.

Dear Sir:—I wish I could tell the 'steen million amateur photographers in this country that if they miss getting the "Library of Amateur Photography," they will miss the greatest bargain ever offered. One volume alone is worth many, many times the price you ask for the four; and I consider the chapters, "How the Studies Illustrating This Volume Were Made," as being particularly valuable. That is just the information in regard to exposure that we amateurs are in need of.

E. D. HOOEY.

A number of inquiries have reached us asking for a substitute for metol. The Eastman Kodak Company have gotten out an excellent formula as a substitute, which is as follows:—

Water.....	30 ozs.
Hydrochinone.....	100 grs.
Sulphite of Soda (Eastman)....	200 grs.
Carbonate of Soda (Eastman)...	3 1/4 ozs.
	(Avoirdupois)

Add one drop of 10 per cent solution bromide of potassium to each ounce of the above developer, and use at a temperature of 68 to 70 degrees.

The British Journal Photographic Almanac for 1916.—Geo. Murphy, Agent for United States, New York City. Cloth, \$1.00; paper, 50 cents; postage extra, according to zone rates.

As might naturally be expected, the *British Journal Almanac* for this year has been delayed somewhat in publication, but despite the impediments incident upon the war, the editor has presented a volume of much interest and importance to photographic readers. The contents are varied, as usual, and the subjects treated of a practical worth to the profession.

What is of special interest is the energy displayed by manufacturers in Great Britain in meeting the requirements of workers whose resources had been so suddenly crippled by the disturbance in commercial relations. Thrown back almost exclusively upon their own capabilities, they have practically overcome the embarrassment by home supply or by substitution. The advertising pages therefore are of particular interest, as indicative of the manufacturers' independence of foreign supplies.

TO GET AN EXACT FOCUS

When a very fine focus of an object is desired, it will facilitate matters by applying a thin coat of the following varnish to the rough side of the ground-glass: Spirit of turpentine, 600 parts; beeswax, 8 parts; rosin, 8 parts. Let this dry and polish with a piece of fine cloth. To obtain a focus of great precision, it is necessary to use a special lens.

A PYRO DEVELOPER

In view of the expense of the regular hydroquinone "process" developer, our research laboratory has worked out a pyro developer which will give a density equal to the regular hydroquinone-caustic "process" developer if used for a little longer time, a preferred time and temperature being 5 minutes at 70 degrees Fahrenheit.

The following is the formula:—

	Metric	Avoirdupois
1. Sodium sulphite, anhydrous	75 grams	7½ ozs.
2. Pyro	10 grams	1 oz.
3. Carbonate soda, anhydrous	25 grams	2½ ozs.
4. Caustic soda, pure	2½ grams	¼ oz.
5. Potassium bromide	5 grams	½ oz.
Water to	1 litre	100 ozs.

Dissolve the sulphite in some water, then add the other ingredients in order given. If it is required to keep the developer a long time it may be desirable to make up and keep the soda as a separate solution.

EASTMAN KODAK COMPANY,
By A. J. NEWTON, Engraving Department.

One afternoon a beautiful young girl rambled into a camera store and began to look over the supplies. Instantly a youthful clerk of the male persuasion gallantly hustled forward.

"I am looking for a small camera," sweetly remarked the fair customer, picking up one of the exhibits. "This one rather appeals to me. What is its name?"

"That is the Belvedere," was the prompt response of the obliging salesman.

"Indeed!" haughtily returned the young beauty, giving the clerk a freezing stare. "Can you recommend the Belva, sir?"

SODIUM SULPHITE AS A DEVELOPING AGENT

Sodium sulphite is used in connection with amidol for developing without the addition of alkali. We have received a communication wherein it is stated that the photographer employed sulphite of soda with pyro without use of any alkali and was able to perfectly develop the plate to a good printing density negative.

At first we were inclined to think that the action was due to use of a sample of impure sulphite containing carbonate which is apt to be associated with some specimens of commercial sulphite of soda. To resolve the question, we made an experiment with perfectly pure sodium sulphite, testing to determine any trace of carbonate. A solution of this sulphite at 25 to 100 and to which was added 15 grains of pyrogalllic acid for 3 ounces, was used as a developer for a normal exposure, the evolution of the image was much slower than with the use of the normally constructed pyro developer, but after a lapse of time the image gained proper density.

A verification was made several times with the same result. Compensating for the slow development was the entire absence of fog, notwithstanding the increased length of time of development. We subjected, what might be called undertimed exposures, to the developer for 12 hours without the slightest veil occurring or any softening of the film.

The bath itself kept remarkably clear and could be repeatedly used and kept for weeks, if preserved in close stoppered bottles.



— IT'S ON THE WAY —

Movie director—That's right, show surprise. Now get some action—plenty of action!—Judge.

KODAK ANASTIGMAT



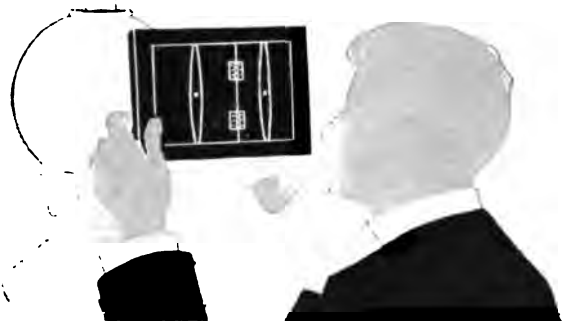
The success of the Kodak Anastigmats is due to the fact that they are made for a specific purpose and fulfill it.

As a rule, anastigmat lenses are made to serve a dual purpose. The lens that is to cover, say a 4 x 5 plate, at its largest opening, is intended also for a 5 x 7 plate as a wide angle lens when used with a smaller stop. It is, therefore, corrected to hit the "happy medium" and serve both purposes.

The Kodak Anastigmats have no such handicap. They are corrected to cover only the particular Kodak size for which they are listed. No consideration has to be given to anything else because nothing else is likely to be asked of them.

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THE CAMERA



April 1913

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Volume Twenty

APRIL 1916

Number Four

WHY SHOULD I COMPETE?—C. H. CLAUDY

TOO many beginners read of the very interesting and liberal photographic competitions which are constantly being arranged, only to decide that "they are not for me." Ask one of these timid photographers why he doesn't compete in THE CAMERA competitions and you will probably be told, "Oh, they are for the fellow who knows how. I've only been making pictures for six months (or two years, or a week, or whatever the time is), and what chance would I stand?"

Now this is all wrong. The very least important thing about any photographic prize contest is winning the prize! It's very nice to win a prize, and it gives one a pleasant feeling of satisfaction and superiority, and one is glad that one's work deserves so high a rank. But the actual carrying off of first or last prize is only a hundredth part as important as the education which competition has given.

The way to learn to be a good photographer is to make photographs, of course. But mere aimless snapping of the shutter and developing the result will never carry anyone very far upon the road—or if the photographer is very clever, and does learn by haphazard snapshotting, then the process will not carry him as fast as earnest labor toward a preconceived goal.

That is what a prize contest really is—a goal, an end, a harbor, the post of a race, a mark to shoot at. It is the competing which is important, not the winning.

Now there are many ways of trying for a photographic prize. But the way which is comprised only in making one or two photographs of the desired kind and submitting them in the *hope* that they "will do" is of little value to you and less to the contest.

Suppose, for instance, that the prize is offered for a "Home portrait." The idea is, of course, to make a home portrait which will be better than any other home portrait submitted. But the end is not to be attained merely by taking sister or brother, sticking them against a wall by a window and making a

good technical negative. To successfully compete with others you should *first successfully compete with yourself*. You should make a home portrait and then jump on it—jump on it hard. Pick all the flaws in it you can. Judge it unmercifully. Get your friends to judge it without mercy. Ask a photographer of experience just how bad it is.

When you are quite sure that it is positively the worst home portrait ever made, go ahead and do it over again. Strive to eliminate the faults that have been pointed out to you. The first one had too much contrast. Give more exposure, use a softer light, eliminate the dark background. The pose was stiff. Strive for any easy position. The expression was strained. Arrange matters so you can give a shorter exposure and catch your subject unawares of the exact moment the bulb is pressed. There was an awkward hand in the result. Pay particular attention to the fingers and the way they rest, on lap, chair-arm, or whatever. Spend time on the job. Get a sitter who doesn't mind waiting, and with whom you are at ease. If your own sister is too impatient, get some other fellow's sister. Have a box of candy around and let her eat it.

Rome wasn't built in a day and no prize-winning home portrait was ever made in five minutes unless it was one of those happy accidents that occasionally occur. But let it be said in passing, that, while beautifully made pictures, which are only accidents, are no less beautiful because of their innocent making, they are not deserving of prizes, and teach little. You don't want to make an *accidental* ten strike—you want to do something well in such a way that you can do it again.

Now you have your second result before you. There will be forty things wrong with it. Hair is out of place. A breast pin came unfastened and you didn't see it. There is a peculiar and unflattering patch of light under one side of the nose. The beautiful blue eyes of the original look washed out and staring, or the magnificent black eyes of Peggy (the other fellow's sister) look like holes burned in a blanket. There is a triangular fold in the dress which you are ready to swear wasn't there when you made the picture.

Try again. Don't forget all the first crop of mistakes in eliminating the second crop. Be very particular about this. For it is the one great thing the constant striving toward a perfect portrait is teaching you—*the ability to see*. All the mistakes you have made in both trials were perfectly evident before you made the exposures—but *you* didn't see them. Your photographic eyes were not opened. You saw only the general effect. Now Peggy's general effect, we will suppose, is such as to flutter the heart. But you are not engaged in fluttering hearts, but in making a picture. And Peggy, be she never so beautiful, must be photographically arranged if she is to make a fine picture.

In passing, let it be said, that while all the world loves a good picture of a pretty girl, a successful home portrait can be made of a homely girl with perhaps more ease than of a beautiful one. Physical beauty, no matter how full of character it may be, is yet of the flesh. A home portrait, which shows an inner beauty of character, and which is fine as a photograph, is a better job and stands an equal, if not superior, chance to win a prize than a photograph



"THE RACONTEUR." R. C. NELSON, HASTINGS, NEB.



"MEISSEN IN WINTER." OTTO EHRHARDT

which covers photographic faults with the sweetness and the charm of physical prettiness. This is no argument against using a pretty girl for a subject—it is merely a caution that you remember that the prize is given you for your skill in rendition, not your taste in girls.

All right—you have made your third effort. Background, contrast, hands, dress, ears, lighting—they all seem to be as good as you know how. But go after the picture with a microscope and find more faults. If that arm, extended on the chair-arm, had a little more curve, wouldn't the lines lead better to the face? If that too straight and carved chair-back were a little less prominent, wouldn't the face and figure be more centralized, more the mainspring of the picture? That vase on the mantle now, that you thought rather pretty in the first effort—doesn't it, a little, take away from the effectiveness of the pose—isn't it an incongruous spot of light?

Try it. Take a print, cut it out, lay it on another print of the background, the room, and eliminate the chair-back and the vase. Curve the arm with pencil or brush. Experiment, try, worry, change, fool around, *work*. *Then go do it all over again.*

Well, by this time you have found that I do not regard a contest as a casual afternoon's entertainment. And if you say, "But that is so much work," of course I haven't a word to answer. If it's "too much work" to learn to be a good photographer then why bother with photography at all? Where is the fun in aimlessly snapping a camera around the country and calling yourself a photographer? The whole joy in amateur photography—outside of that simple pleasure of preserving mere records of places seen—is in doing one's work *well*.

Having competed with yourself, you are in a position to begin to compete with others. And having sent your best effort, you can calmly await the verdict, knowing that, regardless of what it is, you are going to learn something. If you win, you know that your effort and time and labor amounted to some good purpose. If you don't win, then you can immediately begin to study *why* you didn't win and why the other fellow did.

Now, just a word here about the pictures that did win. Get rid of any idea that you *should* have won. If you should, you would. I know how THE CAMERA conducts its contests. I have seen the way the judges do their work, and the work is conscientiously, carefully and honestly done. The awards are made on a strict basis of results. There is a reason, and a good reason, why your picture wasn't considered as a prize winner. It is up to you to find that reason. It is up to you to study the winners and see wherein they have excelled you. Then it is also up to you, having found out in what you were beaten, to go right straight back to that patient sitter and try to get in a new home portrait the things the winners had in theirs, and to eliminate from yours the things which you now know you should not have had. For only in such a way can you get the full value from your work.

Then dig right into the next contest. Maybe it is landscape or snow scenes, or flowers, or pigs, or babies, or storms, or boats, or mountains, or genre, or

doorways, or statutes, or farm animals, or clouds, or whatever. The subject isn't important, at first. It is but a nail on which to hang effort.

I know one young woman who has submitted pictures in fourteen different contests, and never won anything more than an honorable mention. But that girl is going to be heard from. I can see the day coming when the editor will dread to see her name on a package of prints, because he is going to have such a hard time keeping her from winning every prize he offers. And that day will come just because she regards a contest as a football player regards a game—as something to be won by earnest preparation, supreme effort and gameness. To send her prints home is but to encourage her to try again.

That is the spirit. The reward comes in many a fact tucked away by that teacher who never lets one forget—personal experience. And that is the real end and aim of all contests, and that is why you should compete—because in no other way can you gain good experience so quickly or so well impress upon yourself that multitude of little things, proper observance of which makes all the difference between a poor photograph and the one that wins the prize.

PHOTOGRAPHIC INTERVIEWS WITH WILD FOLK—HOWARD TAYLOR MIDDLETON

APRIL as well as June is appropriate for the making of wild-life pictures, and the photographer who imagines that he must confine his camera shooting to the good old summertime is wrong, indeed. In fact, there is no closed season for this royal sport as each new month brings with it the possibility of obtaining, under the most auspicious circumstances, a photographic interview with some denizen of the woods, fields or streams.

For instance, *Buteo lineatus*, the red-shouldered hawk, better known as chicken hawk to the poultry raiser who has just cause to prosecute him, is most easily photographed during the winter, when his greatly relished dish, spring chicken, is not obtainable at his favorite café, situated in Farmer Brown's henyard, and his smaller prey, such as the juncos and English sparrows, are scarce and wary.

It is an established fact that wild game can be approached more closely when hungry, the quest of a sorely needed dinner eliminating to a great degree the fear of man. This is particularly true of the hawk and on cold winter days you will find him perched in an old dead tree near a rail-pile on the lookout for a venturesome mouse, or overlooking a heap of brush where sparrows congregate. He will remain there for hours at a time, a feathered statue, immovable and grim.

Locate a favorite haunt of Mr. Redshoulder, and, after looking the ground over carefully, place your camera in a blind composed of pine branches or corn stalks, and focus it upon the limb which you have learned through observation to be his most likely abiding place; then attach silken thread to shutter trip, and depart to a safe distance, say, one hundred yards. Arriving there, make yourself as invisible as possible, fill up your Jimmy pipe, and pray for luck.



"ZEPHYR." © GERHARD SISTERS, ST. LOUIS, MO.



"NAOMI." GERHARD SISTERS, ST. LOUIS, MO.

You must not expect to obtain a picture the first time you try; that would be asking too much of Fate, but if you are endowed with sufficient patience, you'll land him eventually. Then at last, after innumerable failures, when he comes sweeping down from the heights and settles where you want him; when the thread is pulled and he is yours, you will realize for the first time, perhaps, that there is no sport quite as rare as wild-life photography.

Even the outdoor world has its humorous side, and now that we have photographed the villain in the play, let us turn our camera upon the comedian, Mr. Dab Chick, alias Hell Diver. There is something excruciatingly funny about this little fellow who wears his legs so far back upon his boat-shaped torso that in attempting to locomote on land, he enacts the role of an inebriated gentleman returning from the club. I remember the first time I made his acquaintance. George and I were after reed-bird, and while poling through a narrow channel between mud-flats we spied a diver en route for the water. He had evidently been disturbed by our approach while dining upon frogs in an inland pool, and in making haste toward the creek where he could dive to safety, he indulged in comedy stunts that were side-splitting. With body



"RED-SHOULDERED HAWK." H. T. MIDDLETON

rigidly erect, and head held high, he staggered down the incline of slippery mud while we roared with laughter. "By Heck! he looks just like Zeke Stebbins when he's soused," cried George, between paroxysms.

Once in the water, however, this aquatic bird loses all trace of clumsiness and becomes a graceful and swift submarine. So shy is he that it is difficult to approach him within gun range, let alone that of the camera, and so quick is he when submerging that he can sink from sight between the flash of the gun and the arrival of the shot. You can use up a box of shells on a dab chick and then not get him unless you have some means of attracting his attention elsewhere while you aim and fire.

I have indulged in this brief biographical sketch in order that you might better appreciate the obstacles that must be overcome in order that his portrait may adorn your Nature study portfolio.

He is very fond of floating about in sheltered coves near the shore, and if you are sufficiently game to take the very slim chance of obtaining a picture at close range, secrete your camera in the bushes at the edge of the stream, set your focusing scale at six feet, attach your silken thread and once more call upon the god of luck to aid you.

A successful photograph of Mr. Dab Chick under these conditions is possible, but far from probable, I can assure you.

A portrait of *Procyon lotor*, the raccoon, in a wild state, is a very hard thing to procure, and there is only one really practical method, viz.: through the medium of the set camera attached to baited line and working synchronously with "Imp" flashlight gun.



"CHICKAREES." H. T. MIDDLETON



AUTO GIRL." © GERHARD SISTERS, ST. LOUIS, MO.



"DECORATIVE STUDY." GERHARD SISTERS, ST. LOUIS, MO.

The best bait for a coon is cheese and he will take that in preference to all others. Even a marsh coon who lives largely on fish, when given his choice between a lump of limburger and a freshly caught perch, both of which were strung on a camera line, photographed himself munching contentedly on the former, while the picture shows the perch quite untouched.

Any photographer with a keen desire for a wild coon portrait can obtain one if he is fortunate enough to reside in the locality where this interesting animal makes his home. He must take the trouble, however, to scour the countryside with baited lines to be hung up at all likely places. If you have a coon dog to assist you, your troubles will be greatly lessened, because if he knows his business he will be able to locate *Procyon* for you. Arriving at the base of a hollow tree, he will suddenly become wild with excitement and make frantic, though futile efforts to ascend the trunk. If you are versed in the ways of hunting dogs, you will grasp the situation at once and establish your baited camera beneath the tree. If R. A. C. Coon, Esq., has not dined before the soft breeze carries the strong odor of the limburger luncheon to his sensitive nostrils, he may not wait for the shades of night to gather o'er the woodland, but



"RACCOON." H. T. MIDDLETON

pay your camera a visit soon after your departure. I would suggest that you go into hiding for awhile, and, perhaps, you'll catch him in the act.

If you are fortunate enough to witness a coon's antics when attracted by a baited line in the daylight, I am sure you will never forget it. First, his sharp nose is thrust out from the hole in the hollow tree, which is situated sometimes as high as thirty feet from the ground. Then his head appears and is turned in every direction to make sure that no enemy is lurking near. Satisfied upon this point, he ambles down the tree, for all the world like a miniature bear, and approaches the bait. It takes him quite some time to make up his mind whether all is as it should be. He is not well versed in the ways of philanthropists, and it is hard for him to realize why anybody should spread such a delicious feast without demanding something in return. He has already lost a toe in a never-to-be-forgotten encounter with a steel trap, and is, therefore, somewhat of a skeptic. That cheese smells so good, however, that at last, after circling the camera outfit a good many times, he makes a pass at the tempting bait with a fore-paw; then as nothing happens, he grows more courageous and closes his jaws upon it with a vicious snap. "B-o-o-o-m!" goes



"HELL DIVER." H. T. MIDDLETON

the flashlight gun, while a great puff of white smoke sails lazily skyward. Say, if you think a squirrel can climb, you should see Mars' Coon go up that tree. Believe me, *Sciurus carolinensis* has nothing on him as an aerial acrobat. A gray furry streak races up the trunk; a ringed tail flirts for a second outside the hole, and he is gone. After his terror, caused by the explosion, has subsided and the pleasant after-taste of the cheese still remains, he will remark to himself that the experience was quite worth while after all, and that he will be pleased to repeat it as often as the opportunity offers.

Didelphys virginiana, the Virginian opossum, is very rarely encountered during the day, but is easily photographed at night by means of a set camera. In localities where he is very numerous, it is almost impossible to obtain pictures of any other animal because of the fact that he will arrive at the bait before the more timid prowlers are abroad. In Mexico, where jaguars abound, it has been found a waste of time to attempt to photograph them by means of bait and flashlight because of Brer Possum.

Occasionally when on a cross country hike with Nero at heel, he will leave you to sniff at the foot of a stump or along the edge of a brier patch, which very often means that there is an opossum taking a siesta within.

Ordinarily the *Didelphys* is a sluggish and timid quadruped, whose chief accomplishment is to play "possum" when encountered by man or dog. However, in the Springtime, when Mrs. Opossum has a litter of youngsters in her pouch, a wonderful change takes place in her disposition. She becomes not only a fond parent, but a formidable antagonist, willing to fight all comers, great or small, in defence of her progeny.



"OPOSSUM, WITH YOUNG." H. T. MIDDLETON

The old lady whose portrait appears as an illustration with this article had ten little opossums about the size of a half grown barn rat playing 'round her when she was first discovered, but by the time the camera man approached near enough for a picture, all but three had vanished within the pouch. The writer was fortunate enough upon another occasion to obtain a complete family group, showing the mother and ten young, as well as Daddy Possum, repelling invaders. (See January *Outing*.)

For the benefit of those who have not perused my former article upon the subject of wild-life photography in THE CAMERA, I would state that pictures such as appear in this story do not require an elaborate equipment. All of them, with the exception of the hawk used as decoration, which was photographed with anastigmat lens, shutter speed 1-300 sec., were taken with a Premo long focus camera, R. R. lens, shutter speed 1-100 sec., Imperial flash-light plate, developed in M. & Q., and printed on Cyko contrast. The only auxiliaries used were "Imp" flashlight gun, \$1.75, and spool of silk, 5 cents.

I use the "Imp" gun for all pictures wherein the subjects photograph themselves, or when the operator is compelled to shoot the camera from a distance. When the silken thread is attached directly to shutter trip, there is always the danger of the camera being moved and causing a blurred image, or in the event of an animal pulling strenuously at the bait, there is the possibility of the camera being pulled down and broken. The "Imp" with its air pump connected to camera by rubber tube overcomes this trouble entirely. Before the days of the flashlight gun, I used a thread with just sufficient strength to snap the shutter before breaking, but this was not entirely practical because sometimes the wind would blow the thread against a twig where it would catch and



"RED-SHOULDERED HAWK." H. T. MIDDLETON

break without springing shutter. Still another way is to prop up the shutter release with a twig or match; then stretch a rubber band over the release and around some projection below it, and tie pull string to the match or twig. When the string is pulled, the match is jerked from under the release, which is immediately pulled down by the rubber band and the camera is free from the pull string, and in no danger of being pulled over and dragged around by the subject.

There is so much real fun in the taking of wild-life pictures that even the fellow who is confined to the metropolis during the greater part of the year, should try it just once, and, of course, that means forever afterward. Go out to one of your big city parks some day and experiment with the squirrels. Set up your camera outfit, baited with a meaty nut, at the foot of a tree, and procure a series of portrait studies of Mr. Gray or Reddy Chickaree, as he partakes of the banquet so kindly bestowed. By different arrangements of bait and background, you can obtain many characteristic poses which make fine pictures from a natural history as well as artistic standpoint. The experience that you will gain from taking the squirrel photographs will stand you in good stead when your vacation comes and you hie yourself to the wilds where nobler quarry challenges your camera.

CONSTABLE, THE LANDSCAPE PAINTER* XANTHUS SMITH

JOHN CONSTABLE, R. A., is said to be the father of the Barbizon School of landscape painters, those painters who have attained such notoriety since the period when Constable's works made their appearance in France.

There is no doubt that when the French painters saw Constable's pictures, or the fine mezzotint reproductions of them by Lucas, they were impressed by them and caught the idea for a new way of expressing their interpretations of nature. Almost, with the exception of the work produced by Calame, all French landscape painting had been of the most feeble kind. Weak in subject, lacking boldness of handling and conventional in coloring, and the French landscape painters awakened to a conception of boldness and a new mode of rendering Nature which has created an impression widespread and in some respects deservedly appreciated. But it is to be regretted that the inspiration and the manner should have wasted itself in the vague dreaming of clouded imaginations. All that is true and excellent in art must be founded upon Nature, and no one understood this great broad truth better than Constable, Constable the great artist and great worshiper of Nature. No painter ever loved her better or strove harder to convey her in her wonderful effects, and the fine things which he has left us are not the result of dreaming before Nature, but of hard work—days and years of industry, watching, sketching, drawing and painting. In skies alone Constable was a master, and the numerous, careful

* Sixty different examples of Constable's paintings are shown in the "Painters' Series."
We supply these at 30 cents per copy, post free.

sky studies left by him attest to his enthusiasm and his industry in mastering the mysteries of the celestial atmosphere. We will here quote what he himself has recorded. "That landscape painter who does not make his skies a very material part of his composition, neglects to avail himself of one of his great aids. Sir Joshua Reynolds, speaking of the landscapes of Titian, of Salvator and of Claude, says, 'even their skies seem to sympathize with their subjects.' I have often been advised to consider my sky as a white sheet thrown behind the objects. Certainly, if the sky is obtrusive, as mine are, it is bad; but if it is evaded, as mine are not, it is worse; it must and always shall with me make an effectual part of the composition. It will be difficult to name a class of landscape in which the sky is not the keynote, the standard of scale and the chief organ of sentiment. You may conceive then, what "a white sheet" would do for me, impressed as I am with these notions, and they cannot be erroneous. The sky is the source of light in Nature—and governs everything; even our common observations on the weather of every day are altogether suggested by it."

In the rendering of Constable's distances, see the fullness and roundness of his passages of foliage, varied by lighter and more elegant groups and contrasted by agreeably picturesque structures. We all know how satisfactory it is to the intelligent observer to see a massive church tower, or a more elegant structure surmounted by a tapering spire, contrasted with full masses of rounded foliage. How fully Constable appreciated this! How he loved to bring together such features and to play his sunshine about them—the sun bursting through a vent in his grand noble clouds, and brilliantly illuminating some valuable



"SALISBURY CATHEDRAL, FROM THE MEADOWS" CONSTABLE

passage and obscured from another portion, which in its gloomy mystery gives such brilliancy and value to the sunburst. Atmosphere and effect rule supreme in his distances and middle distances, sunshine and poetry characterize them.

Trees—what lover of Nature but sees a world of interest in the variety and beauty of trees? And was not Constable at least a lover if not a worshiper of trees? We have only to look at his renderings of trees to be convinced that no detail which added to their truth and character escaped him—sometimes the solid round masses which characterize certain trees which have grown under favorable conditions of light and moisture, and at other times the tall, light and graceful with fleecy foliage, and sweeping stems and drooping branches. The more majestic are not overlooked—the large straight stem and direct and wide-reaching branches, all well studied and faithfully rendered. In addition to all this Constable was a master in foregrounds. He was not contented with vacuity or straggling repetitions of meaningless scratchings and doublings. He understood fully the value of the selection of good and appropriate features in a foreground—of largeness and of force. Go over his works, see how he conveys a passage of briar and bramble, all glittering with morning dew; and how he loves to bring in some large leaved water-plant or mass of dock to get expression and fullness and contrast, and in addition he introduces figures. Figures, provided



"THE LOCK." CONSTABLE

they be of an appropriate kind, are undoubtedly of great value in subjects such as those which Constable delighted to depict. He understood well that in rural and domestic scenes, appropriate life gives a homely and universal interest. Man draws to his kin and his doings, and in those places where we expect to see him there is a look of loneliness and desertion without him which is disappointing to the beholder. The shepherd boy with his flock and dog, the miller with cart and bags, the ferryman, the ploughman and the boatman carrying on the business of the canal and water traffic all conduce to the interest and the value of Constable's pictures. In this connection, Constable advised artists to be on the look-out at the time and place of making a study for a picture, and secure whatever happened to present itself in the way of accompanying life, as it would be sure to be much more appropriate than what might be thought out at some later period in the studio.

Constable's handling, as painters call the mode of applying the colors to the canvas, was a new departure in landscape painting. With the exception, perhaps, of Richard Wilson's work, we do not find anything that can be called bold handling in the productions of the English landscape painters prior to Constable. Wilson's work was largely and vigorously treated, but there was a certain flatness, giving the appearance of rapidity of execution very different from Constable's manner.

The fondness of the English painters for magilps, gumption and such



"DEDHAM VALE." CONSTABLE

mediums gave a certain thin, slack and washy appearance, and after a time yellowness, which went beyond tone and in its brownness destroyed the green freshness and pearly grays which so enhance the beauty of landscape paintings. I would not wish to be misunderstood as condemning this mode of handling altogether, because for small works, and when a judicious use of medium was made, the result produced was charming, and lasting too, as many works produced upward of half a century ago now attest.

Constable produced his effects with a solid body of paint. He loaded, re-painted and hatched and dragged and scumbled in a manner which gave a certain force and crispness and meaning expression to his surface which was original and conveyed a truth to Nature and realism which by many art lovers is valued infinitely beyond the slick and washy, though more finished surface of the magilp school.

Such handling as Constable's, however, can only be successfully accomplished by a man of genius, who, in addition to his talents, has studied much and faithfully from the great instructor, Nature. There must be mind and knowledge in all those strange loadings and draggings of the color, they must represent luminousness here, solidity there and mystery elsewhere. They must give that uncertain glimmer that marks certain portions of a beautiful landscape scene, and that infinity of leafage and stem and bloom that constitutes a fine foreground.

Such handling as Constable's can only be the result of that talent or genius which perceives keenly all Nature's charms even to the most hidden, and by years of careful study and practice embodies upon canvas what is observed and felt. The impressions received upon the eye, direct from Nature, are conveyed to the canvas, no one can explain exactly how, but in a manner which gives a genuine artistic truth and meaning to every clot and drag and hatch of the brush and color. This is what constitutes sentiment and expression and truth in landscape painting.

Now in the works of the French landscape painters, who are said to have received their inspiration for a new interpretation of Nature, from the paintings by Constable, we see Constable's bold apparently careless handling merely debauched. We see all the loading and scumbling and glazing, but we do not see Nature back of it. Like all imitators they fall through. Instead of making Nature their idol and by their genius, if they have any, giving us an original creation founded upon Nature which would make their work valuable, they dream over their idol, pretending to make up in imaginings what they should give us in transcripts, and end in producing inane daubings, something produced in accordance with a school, in their case, the school of Constable. What school had Constable, and what school did he work in conformity with? Constable's school was Nature, and the school that he worked in conformity with was Constable's genius taught by Nature's school.

All that could be considered shortcomings or defects in Constable's paintings we see glaringly set forth in the Constable French school of landscape painting. His coloring was cold, he was no warm glowing colorist, his effects

and contrasts violent, his handling by many considered coarse. In the French landscape we find the cold, heavy coloring, but without the crispness and silvery brilliancy of the original master. Their tone running into the leaden—the disagreeableness of chrome green and black, or the still worse smudgy hot brown glaze. And where Constable managed to get the retiring of distant portions and advancing of nearer, which is so excellent a quality in landscape, their passages lie flat, their distances are as strong as their foregrounds. A field is like a piece of green baise hung up. Any impression which we get of Nature through their works is of her in her lowering, threatening, unatmospheric and most disagreeable moods.

Constable stands out alone as a painter. Do we not recognize him at once? In looking at one of his pictures do we say, oh yes, that is of such a school? No, not by any means. But! on the other hand in viewing a Rousseau, a Daubigny or a Dupré do we not say at once, that is of the Barbizon school?

A striking difference between the work of Constable and that of the painters of the Barbizon school is in the manner in which their paintings translate into black and white. The mezzotint engravings from Constable's paintings are eminently satisfactory as works of art. The large impressions from the plates by Lucas make fine features when framed and hung upon walls and are most gratifying to art lovers and at the same time instructive to painters. An eminent and very original landscape painter that we knew, had "The Lock" and "The Cornfield" framed and hung, prominently and permanently, upon the walls of his studio. On the other hand, what a poor impression we get of art in looking at black and white reproductions of the masters of the Barbizon school! To begin with they are wanting in interest of subject. Then there is an absence of composition. The subject, often very meagre, being scattered down, regardless of harmony of lines, clumsy, round, dumpling forms, or often straggling, ragged forms and parallel, horizontal and perpendicular lines forming an unsoothing arrangement that destroys that agreeable harmony that should go with good landscape art. Added to all this an absence of carefully studied refined detail, and we have something that, in going over a collection of engravings or half-tone reproductions or even etchings, we are disposed to give the go-by, as we do not find that interest awakened which full compositions and an abundance of truthful detail furnishes us with.

Those who write in praise of the productions of the Barbizon landscape painters, lay great stress upon the manner in which they dreamed before Nature and conveyed their poetic imaginings to their canvasses. We recall, having read an anecdote of one of the eminent Barbizon painters having been induced to add a work of his hand to a wall collection of studies painted by notable men who frequented a certain inn, a noted resort of artists at Barbizon. He arrived early in the day with his paint box and brushes, but instead of proceeding to work at once he sat smoking and ruminating until nearly dark, when he sprang up and dashed a magnificent creation upon the wall, "an impression," a something infinitely superior, of course, to any of Constable or Turner's ploddings. Now it dawns upon a genuine landscape

painter that, this artist at the time of his arrival and throughout the day did not feel in the mood for work, but as evening approached and he saw the vacant space upon the wall staring at him, he felt that he must rouse up and do something and he made the best use he could of the limited time left him before dark.

A good deal of the work left by these Barbizon romanticists is of a character well known to landscape painters. It is a natural consequence of outdoor study. You arrive with your paint box and canvas at a certain sketching ground and look about for a suitable subject—something that you think you can make a picture of. The first arrangement which at all attracts you, and which you feel might be worth attempting, after considering carefully, you see some marring feature in it, which decides you to proceed further. Another subject turns up, you pause for a time, and again walk on, and so you continue until having become more and more fatigued by your search you seem to see less and less of interest or worthy of spending your time upon and finally as the day wanes you feel that you must make a dash and accomplish something, as



"STUDY OF ASH TREES." CONSTABLE



"THE VALLEY FARM." CONSTABLE

your conscience will not allow you to carry home an empty canvas. In a fatigued condition, and probably with an inferior subject before you, you produce something which will be valueless as a picture, but which, should you be fortunate enough to have your reputation boosted up late in life, subsequently falling into the hands of a noted dealer in art, will command its thousands of francs. Many such productions now hang upon the walls of art patrons, or rather American purchasers of foreign art, forming a portion of another and very large class known as "pot boilers," creations of a comfortable studio, produced without the discomforts of trudging in the sun, and sitting on a rickety camp-stool in a glare of light, your canvas wobbling in the breeze, and yourself eaten up by flies and mosquitoes. The great Corot is accredited with much of this agreeable "pot boiler" work done in the earlier part of his career.

We find nothing on record of Constable having produced "pot boilers" or Turner either. Constable left quite a considerable number of freely painted studies—sketches from Nature, many of them large bold works which he made solely for study and never considered as pictures. What he produced as legitimate, salable paintings he bestowed the utmost time and pains upon. Some of Constable's sketches, having been made upon a large scale, and as to ground,

produced in the manner of paintings, have been sold by dealers as paintings thus causing a misinterpretation of his work.

It is a very unfortunate circumstance that so much importance is given to name solely, by purchasers of paintings. The merest unsuccessful sketch by an artist whose reputation has been fostered, will command thousands of francs, or dollars, as the case may be, while the legitimate works of art by comparatively unknown artists will be unsalable, and, unfortunately, if an artist's subjects and manner are of a kind that can be the most easily imitated, or faked, so that those ignorant of art may be deceived as to their genuineness, the greater opportunity there is for dealers in art to reap a harvest.

The buyers of landscape art in this country are lacking in a true interest in the beauties of Nature, or if they have such, do not connect it with art, but make their purchases solely with a view to speculative investment, or through a desire to possess something out of reach of the public generally, and rely solely on the advice of dealers. And Barbizon having caught the public ear, the dealers wax fat upon the ignorant moneyed classes. If those who purchase paintings at large sums would take the pains to look carefully into the subject, ascertain wherein the excellences of the artist whose work they are purchasing lie, and whether they are securing a work that has done him credit when it left his easel, and, in fact, whether it really was produced by him, it would be of vast benefit to the cause of true art.



"THE CORNFIELD." CONSTABLE

CRITICISM OF OUR COVER DESIGN

SIDNEY ALLAN

ORIGINALLY, the cover design on this month's issue of *THE CAMERA*, made by F. J. Sipprell of Buffalo, N. Y., received Salon Honors at the last National Convention. It was not a print from the original negative, but a carefully made and somewhat manipulated enlargement. When I first saw the picture I was agreeably surprised by its atmospheric quality—it constituted the main charm of the print as far as I was concerned—and it seems that the photographer is not able to endow each print with that same quality. In the print before me the shadows are rather black and lack that vibrancy and luminous shimmer which I admired in some of the other prints. It was noticeable in the perspective view toward the door in the distance.

The print has been severely criticised. Fault has been found with the angular pose, the knee and the elbow. As you will notice, the outline made by the skirt, upper leg, and the arm and hand on which the head is resting makes a double angle, and the same is repeated in the lower outline on the shadow side of the figure. In short, all the dominant lines are curiously straight and angular. But this is an advantage rather than a disadvantage. Surely no serpentine curves would go with the vertical lines of the wainscoating, and the rectangular design of the settee. Only a figure like the one represented would harmonize with the particular surroundings. Curves and straight lines sometimes go together, but in that case the curves must be predominant, and the straight lines merely accessories to the line scheme of the larger figure.

Why then select such a theme, some may argue. Well, that is a futile question. Why do we attempt anything out of the ordinary? Because it makes a strong appeal to us. Why should a photographer keep in the same rut when an opportunity is afforded him of presenting something novel and beautiful? The photographer, very likely, was fascinated by the peculiar light effect and the architectural forms. They suggested some new idea to him and he set out to get it. And he did get it. Aside from the lighting scheme, it was largely a matter of proportions that had to be subdued into a harmonious interchange of predominant lines. The vertical lines were successfully balanced by the horizontal ones, and the diagonal floor line lost in the perspective view, and the lighting which made an effective space division of light and dark shapes did the rest. The figure is merely an accessory to this interior study, and fits well into the rectangular scheme. A small rectangular shape can always be satisfactorily placed in a larger one containing the same tendency of lines.

The figure is merely an impressionistic likeness. The expression of the figure and even of the half-covered face is sufficiently characteristic to give us something tangible of the outward appearance of the sitter.

It may not be portraiture at its best, nor does it pretend to pass as such. It is an interesting interior study with a portrait figure introduced into it, and from that viewpoint it should be judged.



"INTERIOR STUDY." F. J. SIPPRELL



"THE MECHANIC." GERHARD SISTERS, ST. LOUIS, MO.

SYSTEMATIC SNAPSHOT WORK WILLIAM NICHOLSON JENNINGS

SNAPSHOT anything, anytime, anywhere," seems to be the slogan of the amateur photographer. We develop and print each year many thousand spools of film, and in no case do we recall an attempt to do serious, systematic work with the hand camera.

When we come across a batch of films marked "Panama Exposition," we know in advance the titles of the various exposures: "Snapshot of Prairie from train," "Our party on Pikes Peak," "We, Us & Co. in the Garden of the Gods," "Royal Gorge from train," "The Tabernacle, Salt Lake City," and the same lot of buildings and night effects at the Exposition.

No wonder the pawnshop windows of every American city are filled with snapshot cameras. It costs money to "shoot" everything in sight, and furnish prints to every acquaintance.

There is only one way to keep up an ever growing interest in the photographic art.

Instead of taking up photography as a mere button-pressing whim, let us earnestly advise the cameraist to illustrate some particular "hobby."

Here are a few subjects well worthy of serious study:

COLONIAL ARCHITECTURE

Practice first upon buildings near at hand. Visit them at least a half a dozen times without the camera. Make a careful study of the best conditions of light and shade. Decide upon your viewpoint to obtain the best results. Learn all the historical facts connected with the place.



"TRAFALGAR SQUARE, LONDON." W. N. JENNINGS

Purchase a well-bound scrap book wherein you can file your "notes" and pictures. *Be sure your prints are very thoroughly fixed and washed so as to be fade-proof.* Leave space for the insertion of additional pictures of this particular structure. At some future time you may desire to include a few interior photographs of the house.

Do not confine your picture-making simply to summer-time. The best pictures we ever saw of Valley Forge were made in mid-winter. Snow banks piled high about the old Washington headquarters, and its eaves fringed with sun-glintered icicles, served as a reminder of the brave struggles of the Soldier of the Revolution.

As you go farther afield with pencil and lens, your artistic and historic interest will increase. Your collection of pictures each year will have added value. The sale of a few prints will soon cover the cost of material employed. You will correspond with fellow "Revolutionists" and a mutual exchange of photographs and historical notes will follow.

Americans are practical people. In every city where landmarks of the colonial period stand in the way of progress—bang! go the landmarks! So it behooves us to put such places on record NOW, before it is too late. Go to it, brother and sister cameraist. It will pay.

STREET LIFE SNAPSHOTS

Instantaneous photography is about forty years old. The lens has winked its glass eye at almost everything in sight, but it does not seem to have occurred to anyone to specialize on "Street Life"—a collection of unconscious poses of



"REGENT STREET, LONDON." W. N. JENNINGS

people during their everyday affairs. I do not mean crowds of people. I refer to little detached glimpses of street life—brief flashes of comedy and tragedy played in plain daylight on life's great stage. There is a street in every large city that is a walking fashion plate. Wide-awake will be the photographer who can keep up with the ever changing styles, and follow the fads and foibles of womankind.

Imagine the value of a volume of pictures reaching from the day of the crinoline, through the "balloon-sleeve" period; the brief "tight-skirt" cycle, to the present day "Morning Glory" outfit!

And Hats! Yesterday, wide sweeping affairs under a bushel of ostrich feathers, or a garden of flowers, and to-day a pill-box and drumstick.

Looking through such a collection of pictures, extending over a period of several years, would be as fascinating as the two dollar "Movie."

"Bargain Day on Baxter Street" will furnish excellent material.

"Children of the Ghetto," if caught unawares, make splendid pictures.

"A Day in Chinatown" will be filled with interesting experiences.

"A Windy Day on Broad Street" (or the street of any city) is a field for the soft focus lens.

"Umbrella Snapshots." With an *f4* lens, a slow set shutter, an artistic eye and patience, you can work wonders with every-day material.

"Holiday Shopping." The sidewalk flower market at Eastertime.

The "Turkey-trotters" the day before Thanksgiving.

The good-natured street crowds at Christmastime.



"DAUGHTERS OF ITALY." W. N. JENNINGS

"Boys of the Street" (newsboys, bootblacks, messenger boys, etc., in a thousand and one comedies.)

"Bench Warmers" (flashlight studies of the "down-and-outer").

"Side-walk Peddlers and Street Corner Fakers."

"Low Life in a Large City" and "High Life in New York" (or any other big city).

"The Dollar Earner and the Dollar Spender."

These are only a few of the many titles that occur to me.

Street life is a field of a thousand phases.

NATURE STUDY WITH A CAMERA

You could devote a lifetime to any one of the many branches that open out under this heading:

"Wild Things of the Woods." To properly illustrate the habits of birds and animals will call for the greatest skill and an infinite amount of patience.

The prizes will be few and the blanks many, but no hunter of big game ever thrilled with half the satisfaction you will experience upon securing your first successful snapshot—say, a fox looking directly into the eye of your Kodak. Fox-hunting on foot with the camera is far more interesting and much less expensive than fox-hunting on horseback.

"Wild Flowers and Wayside Weeds." Most of us pass by the common



"UNPOSED STREET LIFE." W. N. JENNINGS

things of life without a second glance. Yet, the study of the lowly wayside weed will reveal a whole world of hidden wonders.

It will be quite interesting to follow the evolution of the wild flower from bud to seed-pod, and note the many steps that lead from the ragged edge of the meadow or the dusty roadside, to an important place in the formal garden.

If you are a lover of flowers, that is, if you are a normal human being, by all means take up this "hobby," for it will surely bring to you many a golden hour.

This work calls, of course, for a camera with extra-extension bellows, a tripod that can be tilted at any angle and a microscope to supplement the regular lens.

OUR FOUR-FOOTED FRIENDS

A series of animal pictures on the farm and in town. Domestic pets: dogs, cats, rabbits, squirrels, snapshot each, if possible. To illustrate a story, a pair of horses pulling a plow against the sky-line; a shepherd dog rounding up his charge; the puppy in mischief (as usual); the cat sterilizing the milk bottle, ready for the next customer; the meeting of Skye and Mastiff; the toy terrier in his "Who's afraid" attitude; mercury above ninety, horses at watering trough, or cattle knee deep in the "watering hole," and so on for several pages.



"JUST OVER." W. N. JENNINGS

CHILDHOOD

Suppose, at this moment, you could turn the pages of an album and recall the sunny days long since faded. In the lace-lined crib, with your pink toes up in the air; standing in the corner of the room making your first attempt to toddle; in front of the old fire-place with toy soldiers throwing long shadows on the carpet; your first ride on the wonderful rocking horse; tricycle days; on roller skates; the express wagon; the day of days when you went "belly-bumping" down the hill—turning over, leaf by leaf, the many, many incidents of your happy, care-free childhood. Would not that book be the most cherished volume of your library? Well!

So, let us who have little ones begin now gathering and storing away under strong safe covers this picture material, that will surely reap us a big reward when they who now are at our knee have treasures of their own.

From practical experience in many of the above branches of photography, I should advise the employment of a $3\frac{1}{4} \times 4\frac{1}{4}$ camera. Personally, I would rather use cut films in the special film-holder. You can easily carry six double holders in your pockets. All the information may be inserted in the face of the exposed film, between holder frame and slide. You will not have to wait



"A LITTLE CRAP GAME." W. N. JENNINGS

to use the rest of the unexposed spool of film. The new portrait cut films are on heavy stock and will not curl. They are orthochromatic; and stout, fire-proof, damp-proof, filing envelopes are furnished with each package of films. For enlarging or lantern slide purposes the portrait films can be used in the enlarging or reducing camera without interposing between glass plates. You can easily print titles in small script on the back of the film. And for future reference, perhaps years ahead, the cut film will outlive the thin, easily bent roll film.

In the early days of amateur photography someone started the slogan, "Be sure the sun is at your back." If he is dead, his words surely live after him, and bear their crop of the self-same fruit—flat, insipid stuff. The very best effects in photography are obtained when the sun is often almost directly in front of the lens. The motion picture camera man has discovered this lighting produces the finest effects on the "movie" screen. You will find it is the "life" of a street scene, making your characters stand out in a startling relief, and a mere snapshot will be turned into a "thing of beauty and a joy forever," and you will find that many of your prize pictures did not need sunshine.



A "CADGER." W. N. JENNINGS

PAPERS FOR BEGINNERS— MORE ABOUT THE LENS

A LENS acts exactly like a small hole in forming the image. We may imitate a camera by piercing a small hole in a shutter of a closed-up room and allowing the light reflected from objects outside to enter the room through this hole and fall upon a card screen or upon the wall opposite the hole. We thus get a complete picture of the view outside. When light falls upon any transparent substance like a piece of glass, for instance, we see the glass because its surface reflects some of the rays of light, but, we also know by common experience that some of the light passes through the glass. Now, let us see what happens to the rays of light which pass through. Do they go straight through, unchanged, in the same course they began to enter the glass? From ordinary experience, one would say, "To be sure. Do we not see the things outside through the window-pane just as we see them when we raise the sash?" But the truth is we do not see the objects in the same straight line, though pretty close to it, because the window-pane is generally quite thin. The rays which enter the glass are bent. Their course is changed; refracted, as the physicist says. The rays pass from a less dense medium, the air, to a denser medium, the glass.

If the ray passes from a rare or thin medium (air) to one denser (glass), it is bent toward a line perpendicular to the surface of the glass at the point where it enters (point of incidence, as it is scientifically called). As the ray strikes the glass it is bent inward, and, of course, when this ray comes out into the air again it bends from the perpendicular to get in parallel direction of line it had when it entered. But it is not directly in its former path, as you must naturally see, but only parallel to it.



We will now show what takes place when we let the light go through a piece of glass having its sides, instead of parallel, inclined to one another, that is, a piece of glass in the shape of a wedge, or as it is called, a prism of glass.

We showed the way a ray of light behaves when it meets in its path a piece of glass having parallel sides. Now we shall consider what takes place in the course of this ray when we allow the light to go through a piece of glass whose sides are not parallel to each other but inclined, that is to say, a piece of glass in the shape of a wedge.

In the cut we see what takes place with the rays which are reflected from some object when they meet with this wedged-shape piece of glass, which is really a prism, the section of which is an isosceles triangle. These rays of light from the object strike the surface on one of these inclined sides of the triangle, they are refracted or bent out of their course, and on emerging from the dense material of the glass are again turned from the course they had taken in the

glass because they are now traversing a less dense medium than the glass, namely, the air. The path of the rays will, therefore, be different. The inclination is toward the base of the triangle or prism. Now the angle through which an incident or entering ray is deviated varies with the density of the material through which it passes. We can bend it much more if we use, instead of glass, a piece of quartz in the shape of a prism; or, if we substitute a diamond, which is much denser than quartz, we bend it considerably. Some chemical substances also affect the angle, and in physical research such bodies are of the greatest importance. In the making of the lens for photography we also employ glass of varying density, that is, glass having different refractive indices.

The photographic lens is really made up of an infinite number of minute prisms, and this we shall try to show in our next paper, also the way the lens, thus constituted, is made to give us an image or picture of things.

FOCUSING SHARPLY

MANY folks would say that there is little that could be written on the subject of focusing. It is "so simple" that anyone could do it, once they knew what was required. But the more experienced the worker, the less likely is he to treat this important operation so lightly, for he knows that not only may he often be able to halve his exposure by skillful focusing with a larger aperture than a novice would employ, but that he can add to the pictorial value of his work by careful attention to the nature of his subject, and the employment of what has been called "selective" focusing. Like almost all other photographic manipulations, focusing calls for a little forethought in securing the best conditions in the way of providing a suitable ground-glass screen and a properly adjusted and convenient magnifier.

The surface of the ground-glass should be of a very fine grain, and not like, as is often the case, the texture of a piece of loaf sugar. "Acid-etched" glass is often recommended, but as there are various grades, a very fine grain must be selected in this also, for a coarse "etched" surface is almost vermicular in its texture, and is worse for focusing purposes than even a coarsely ground one. The best quality for focusing screens is known as "finely ground patent plate," and this may be obtained from most of the large glass warehouses, or through the ordinary photographic dealers who would procure it to order. Nearly all ground-glass is improved if rubbed over with a little vaseline which is polished off with soft paper until the merest trace is left. This increases the apparent luminosity of the image and takes away the "dry" appearance of the surface.

A compound eye-piece of the Ramsden type is the most convenient form of focusing magnifier, and this should be adjusted to suit the vision of the user by making a fine pencil cross on the ground surface of the screen and sliding the eye-piece in its tube until the cross appears quite sharp. A line should then be made on the tube, so that the exact position can be obtained at any time. It will be noted that it is difficult to see the image at the corners of the screen owing

to their oblique direction, and some glasses are therefore made with a pivoted base, so that they may be so placed as to catch these marginal rays more or less end on. It is desirable that the eye-piece should possess as little chromatic aberration as possible, as it is difficult to focus fine detail if it is surrounded with color fringes, which is often the case when using cheap, single lens magnifiers. Occasionally, screens are provided with clear patches, either by being left unground or by cementing microscopic cover glasses upon the ground surface. This is supposed to facilitate fine focusing, but in my opinion, in the majority of cases, it is more likely to lead the operator into error. Most people of moderate age have a considerable power of "accommodation" in their eyes, and the ærial image will appear sharp when it is some distance from the plane of the focusing screen. There is only one method of focusing with a clear glass screen, by which this error may be avoided, and that is by fixing a small square of tinfoil or other thin opaque substance on the face of the screen. The eye-piece is placed so that one edge of the square bisects its field, and the object to be focused is brought into such a position that a readily recognizable point falls upon this edge. The focus is now carefully obtained, and then the eye-piece is moved up and down. If the image appears stationary, it is focused correctly on the surface of the glass, but if it appears to dodge up and down behind the tinfoil, then another trial must be made.

It is desirable in all cases to focus by a gradual to-and-fro movement of the camera back or front, coming to rest slowly, much as the index of a chemical balance does when weighing a light load. This is especially desirable when using a lens which is suffering from slight spherical aberration, which makes it difficult to select the sharpest position. With such lenses it is necessary to focus with the aperture with which the exposure is to be made as the focus is altered if the aperture is afterward made larger or smaller.

Aids to focusing are often very useful, the commonest being a candle or other flame to assist in determining the limits of the subject, and obtaining sharp definition when working in dark interiors, or a finely printed or engraved card, which is used when copying any badly defined object such as an oil painting with no definite outlines or an unsharp photograph. If the card—an ordinary visiting card answers well—be placed on the surface of the original and sharply focused, the copy will possess all the sharpness which existed in the original. Different types of lenses require different treatment to secure the best results. As a rule, rectilinears and other round-field lenses give the best average sharpness when focused midway between the centre and the edge of the field, unless the subject is one which lends itself to the natural curvature of the field. With most anastigmats it is best to secure the greatest sharpness in the centre, as the margins will then frequently appear sharper in the negative than they look on the screen. With all types of lenses great assistance can be given by a judicious use of the swing back, both vertical and side movements being employed as needed. In portraiture especially a much larger aperture may be used if the back be swung so as to accommodate the position of the sitter, but it should be remembered that with a short focus lens there is always the danger

of making the hands and feet of a sitting figure disproportionately large if the use of the swing back is overdone.

Focusing with telephoto lenses, especially those of high power, is a somewhat delicate proceeding. As the result of considerable experience in this branch, I would recommend that the bellows should be extended to the requisite distance to obtain the desired magnification, and that the focus should be obtained by the rack adjustment of the telephoto tube. If the extension be too great for the pinion head to be reached by the hand, a Hooke's joint handle must be used. This is a sort of winding key which fits on the pinion head and is attached to a long rod by a peculiarly shaped double link, which allows it to be rotated in any position, even at right angles, if necessary. A clear patch on the screen is very convenient when working with telephoto lenses, as the illumination is usually feeble, and it is much easier to get an approximate focus on the clear glass, examining it afterward more critically on the ground portion. Also, in the case of there being any chromatic error, it is seen easier through the clear glass. If such error should exist, the best position to leave the image is when any brilliant white spot in the subject is surrounded by an orange fringe. This will give a practically sharp outline, but if the same point be focused to show a blue fringe, the result will be fuzzy.—*The British Journal of Photography*.

A SHORT CHAPTER ON PERSPECTIVE

IN reality our binocular vision, or the appearance of solidity in objects which is secured by the simultaneous perception of things by both the eyes, prevents us from judging correctly the perspective of a view. If we shut one eye, we get a representation in correct perspective. All our drawings of natural objects are but the representation of what we see with one eye. A thorough knowledge of perspective can only be gained by descriptive geometry, which, of course, is not essential to the photographer, but a knowledge or rather an appreciation of normal perspective—that is, the perspective of our vision is necessary in order to make our photograph have the look of Nature's presentation.

If a sheet of glass—the window-pane, for instance—be placed upright between the spectator and the subject seen through it, and he views the scene with one eye only fixed at one point and draws the outlines on the glass with some opaque color he will have a picture in perspective.

The glass forms what is called the "plane of the picture," and the distance of his eye from this plane should be measured. If he places his eye nearer the glass he will find he can take in a greater range of subject, and if farther off the range will be comparatively smaller. The eye should never be nearer the glass than two feet and best at twice the width of the picture.

It is this distance of the eye from the picture which exactly corresponds with the focal length of a simple lens in the camera. The shorter the focal length the larger the range of subject taken in by the plate of given size,

and also the amount of light let in will be greater in the same proportion, causing the photograph to be taken the faster.

The modern lenses with shorter foci give a photograph more approximately than the picture had with wide angle, but with better perspective.

On examining the outline and noting carefully where the sloping lines of buildings run to, the photographer will find that those that are level in Nature all run toward points on what would be the horizon if it could be seen in the view. Those lines running directly away, or at right angles to the plane of the picture, go toward the center of the picture called the "point of sight," and those sloping obliquely go to points to the right and left, called the vanishing points, so called because the sides of the buildings if carried out infinitely would vanish from sight at that point.

Each group of lines, parallel to each other, go to the same vanishing point. It will be seen that all vertical lines in Nature are vertical also in the view on the glass, and the houses are not drawn smaller as they ascend higher. To our vision they do seem to get smaller, yet the perspective the lens gives is correct. When the eye is in the right place the horizontal lines exactly facing us also taper off right and left as in Nature. In other words, each part of a perspective picture must itself be seen in perspective in order to appear right, and any apparent exaggeration gets softened down and the view has the look of reality. We have all this done by our lens to perfection, and the critic is sometimes wrong in his adverse criticism of our picture in its perspective.

The artist, however, should always so place himself that he shall give to the spectator the idea he himself has and so give his view the suggestion of reality. It is in the placing of the figures in the scene where the trouble comes in, and in our next paper we shall treat this branch of the subject.



"A WET DAY IN PARIS"

W. N. JENNINGS

"NATURE NOTES NEAR HOME"

HUGH MAIN, B.Sc., F.E.S.

I ALWAYS think that nature study, like charity, should begin at home. To the keen natural-history student there is any amount of work always at hand in his own garden, and if a camera or two are kept ready for eventualities, in the course of a few years one can amass a large number of photographic illustrations having a great deal of interest. I always keep two cameras ready, the more important of which is one arranged to look down on the objects placed below on a glass plate or sheet of cardboard. Many subjects which otherwise would be difficult or impossible to photograph, can be secured in that way. Anyone taking up natural-history study should work to a definite scale. This may be natural size, or some simple multiple or fraction of that size. A rapid lens is hardly necessary, seeing that often one has to stop down to $f16$ or $f32$. The exposure should be worked out by the Watkins or some other meter. Any good brand of orthochromatic plate is useful, and for some subjects panchromatics with special screens are a necessity.

"Probably most of the creatures I am going to show this evening are familiar to those present, but in their metamorphoses, with which I shall specially deal, they pass through a number of different forms and appearances with which the ordinary individual may not be so familiar. One can generally, with a little care and patience, find out what a particular larva turns into, and by feeding the larvæ and watching them, many interesting facts can be elicited. My own garden, which is in the Epping Forest region, is only a small one, but all the subjects I show this evening have been obtained, either in that garden, or in the gardens of my neighbors, and I do not think that there is anything among them which could not as easily be observed in any suburban garden."

Mr. Main then proceeded to show his slides, beginning with the eggs of the white butterfly on the underside of a cabbage leaf. From these eggs there hatched little yellowish black larvæ which became caterpillars. He showed how the caterpillars prepared for pupation, and how, after presenting various appearances in the pupa stage, the white butterfly at last emerged. He added that, although the white butterfly laid a great number of eggs, there were so many impediments in the way of progress, and so many enemies to be encountered, that from one pair of butterflies on the average only a single pair of butterflies came to maturity—a fortunate fact for our gardens. The lecturer then turned to some parasitic insects, notably the cabbage butterfly ichneumon (*Pimpla instigator*), which by laying its eggs within the larva or pupa of its victim, caused the latter to turn from its pleasant green color and take a yellowish complexion. This was due to the growth of the larvæ of the parasite, and the lecturer traced the successive stages from the larva to the full development of the fly. He dealt also with moths and their parasites, and with some of the insects which feed on the aphid or green fly, viz., the hover-fly, the ladybird, and the lacewing fly (*Chrysopa flava*). The activities of the leaf-cutter bee

(*Megachile centuncularis*), which cuts circular and oval pieces out of rose leaves and uses them to make its cells, were also dealt with.

One of the most remarkable series of pictures shown illustrated the life-history of the maple leaf-cutter (*Phyllotoma aceris*). This insect lays its eggs in the tips of the leaves of the maple and sycamore, between the upper and lower epidermis. The resulting larvæ feed on the green tissue, leaving the epidermis intact. When full-fed, each larva cuts out a circular piece of the upper epidermis, leaving small portions sufficient to retain it in position. It then spins a silken mat so as to form a double-walled disc with the upperside consisting of the epidermis and the lower of silk, the larva itself remaining enclosed between the two. The larva now commences to jump about and the small discs are detached from the leaf and move over the ground like animated confetti, in somewhat the manner of the well-known jumping bean. In the following spring the larva changes to the pupa, and shortly afterwards the perfect insect emerges. This is seen to be a female sawfly, which at once proceeds to lay eggs, which develop parthenogenetically. As in the case of many other sawflies the male insect is unknown.

One of the most interesting creatures that he came across in his garden was the millipede, two of which were discovered under a piece of rough wood. As the millipede laid its eggs, ejecting them two at a time from the oviducts, it formed them into a ring, and made a wall round them from its own excrement. On one occasion, wishing to secure a picture of the millipede's nest in an unfinished stage of construction just when the outlet or chimney was added, he watched the millipede building for a whole day, and as it bade fair not to reach the interesting juncture that he wanted until late in the night, he took the creature to his bedroom, and when, in the small hours, the creature arrived at this critical stage in its building, he gently drove it away, put a pill-box over the edifice, and waited for the morning light in order to take the photograph. The little millipedes, it appeared, had only six legs at first, but later they went on to 60 or 70. Mr. Main concluded with some pictures illustrating the metamorphosis of the dorbeetle (*Geotrupes stercorarius*), and carried it through from the stage of the egg to that of the matured pupa and the imago. With some of these pictures, visitors to the last annual exhibition of the Society would be familiar. One remarkable point in connection with the pupation chamber of this insect was that if held in the hand one experienced something like an electric shock. This was the result of vibration caused by the insect rubbing one leg against a striated area on the other, and was probably intended to frighten enemies. The lecturer added that these beetle researches had been carried out in association with M. Constant Sano, a young entomologist from Belgium, who had been, until recently, staying in this country, and was now on the Continent serving as a heavy artillerist.—*Photographic Journal*.



OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

SPECIAL NOTICE—*Frequently our readers send us two or more prints for criticism at one time or in the same month. We only criticise one print in any one month, and, in the future, if more than one print is sent, we shall refuse to make the criticisms for that particular entrant. Also, if data sheet is not filled out and does not accompany the print, then no attention will be paid to the submitted print.*

This department is for instruction and to assist those who are sincere, and it is our purpose to help our subscribers in their work.

1196. *B. V. Kelley*.—"Swans on Guard." The queer attitude of the swan to the right doubtless is natural and interesting to a student of zoology, as illustrative of animal behavior, but it spoils the artistic effect of the group to the left, which is a charming study and a very pleasing arrangement. The remedy is easily applied without injury to the pictorial value of your subject, and, indeed, if the knife were used here the effect would be enhanced.

1197. *F. Hermanson*.—"Mending Dolly's Dress." A well conceived genre study, particularly in the treatment of the little seamstress. We would have preferred, however, a picture in the vertical rather than in the horizontal. The vertical would have included more of the model and excluded some of the machine, admitting only what of it that is necessary to interpretation of the subject, since the over presentation of what is not particularly pictorial hurts the general



No. 1197. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Folding Pocket Kodak; anastigmat lens; $f/16$; February 11.30 A. M., cloudy; 30 seconds exposure; pyro developer; special Velox print.

artistic effect. The mass of material in the background immediately above the sewing machine ought to have been left out.



No. 1200. *Data*.—3 A Kodak; Goerz Dagor lens, 6.8; August, 3 P. M.; bright sun; Azo hard print.

1198. *Robt. H. Kraeger*.—"Willows." An excellent photographic study of trees which exhibits the particular specific features of the willows, and at the same time presents them in a pictorial way, reminding one forcibly of some of the beautiful studies of Gainsborough, the great English painter. The treatment of the foreground is excellent.

1199. *Roy Walden*.—"By Moonlight When They Bite." A very pleasing subject with a considerable degree of artistic merit. Presents well a night effect. The sky is particularly good.



No. 1202. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Eastman Kodak; R. R. lens; $f/16$; February 10 A. M., good light; 1-5 second exposure; pyro tray developer; Haloid J print.

1200. *S. Alton Ralph*.—"Convincing Argument." The argument, by the way, is not convincing to us. We fail to see what the motive is you are endeavoring to express. But this is not much consideration, critically. The little one is a very pleasing and natural study, expressed with much feeling, and considered by itself a very creditable piece of work, particularly when we take into account the unusual lighting. The contrasts are well managed. The only fault we have is in the too extended surroundings, especially the mass of black below. Judicious trimming will improve the picture.

1201. *J. I. Saad*.—"Snow-Covered Road." The photograph has some good technical qualities. The texture of the snow is adequately presented, and the landscape setting is possessed of quite a good range of light and shade, which is a good feature considering the character of the subject. The composition, however, might be much improved as the scene seems to indicate possession of much which might be employed for pictorial effect. A more oblique presentation of the subject would have secured more of the pictorial, and besides have removed the roadway from the central position it occupies where it cuts unpleasantly the view, and prevents the eye

from following its trend into the distance, thus spoiling the perspective of the picture. It terminates too abruptly right in the center of the photograph.

1202. *S. Westley*.—"The Brooklet." The principal fault in this view is in the too extended foreground and the monotony it presents. Unless a foreground is particularly interesting in itself we ought not to present so much of it. You will notice how much better it is in the balance of masses, if you simply exclude by means of a card about an inch of the bottom part of your picture.

1203. *W. M. Tomkins*.—"Landscape." The subject is too flat in the illumination, and it is impossible to divine whether the distance represents water or land. There is no attempt at composition or arrangement of parts to a unity of idea.

1204. *H. P. Turrell*.—"Outdoor Portrait." Pose of the figure good, but the model is not sufficiently differentiated from the background, and so has not sufficient relief or atmosphere. It looks too plastered against the landscape. The eyes might have been brought out a little more distinctly. They appear too blurred, and the off eye has an unpleasant spot of light.

1205. *F. W. Munson*.—"Mr. and Mrs. H." The photographic quality is good, but the effect is too violent and contrasty, caused first by the opposition of the light and dark drapery of the models, and secondly by the absolute white background and floor. Had



No. 1204. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Folding Pocket Kodak; R. R. lens; U. S. 4; May 5 P. M., fair light; 1-25 second exposure; pyro developer; soft studio Cyko print.

you used a dark grey ground you would have had the relations better expressed and the figures not outlined so unpleasantly against the background.

1206. *Walter Q. Stevens*.—"Winter Trees." The subject is well managed under the strong illumination. The contrast has been well kept down, and the high-lights and dark shadows nicely presented. The snow texture is well indicated, it suggests the real quality of snow, and is properly broken up into pleasing half shadows. The shadow of the main trunk on the snowy foreground is a particularly good feature. The work gives evidence of good taste and artistic feeling, and also of skill in technical work.

1207. *G. R. Liska*.—"Child Study." A most excellent piece of work, and one executed with good taste and judgment. The lighting is soft and pleasing, full of nice modulations of light and shade and delicate high-lights. The spacing of the picture is particularly good, and the pose of the little boy most natural and characteristic. The background, too, has been well thought out, so as to bring the figure in proper relation with it. There is a nice relief and good atmosphere, which give



No. 1206. *Data*.—2½ x 4¼ No. 1A Kodak Jr.; Kodak anastigmat lens; *f*7.7; December 2 P. M., bright sunlight; 1-5 second exposure; M. Q. developer; Cyko normal print.



No. 1207. *Data*.—5 x 7 Century; Cooke lens, *f*4.5; October 2 P. M., bright light; 2 seconds exposure; hydro-metol developer; Argo print.

proper depth to the subject. A remarkably good picture, possessed of many pictorial features. The variation in the shadows, especially the deep ones, makes the subject most enjoyable.

1208. *Charles L. Bates*.—"An Interesting Story." An excellent portrait study of a child bringing out just the features relating to childhood's happy hours. The little one is really interested in his absorbing task, and, hence, is presented most naturally. The general lighting is good, the face and drapery well brought out, but a little more reflected light should have been accorded the shadow side so as to break the abrupt line on the cheek. The background is a trifle too dark, and so makes the figure come out a little too contrasty. A lighter ground, or one better graduated would give more atmosphere. Another point which would add to its pleasing effect would be in the better spacing of the head. It is just a little too low. The space above the head might be curtailed a trifle and so give better balance to the picture.



No. 1210. *Data*.—5 x 7 Seneca view; symmetrical lens; f/8; December 3 p. m., dull light; 4 seconds exposure; M. Q. developer; special portrait Velox print.

1209. *Marguerite Balhrope*.—"Chums." The illumination is too intense, making the high-lights unpleasantly harsh and void of detail. The animal is an interesting subject, but you have hardly done justice to it. The position is awkward, and does not exhibit the good, natural features of the animal, besides, the fore leg as presented suggests the need of a veterinary. You should have extended it, and also have had a care to see that the hind legs were separated.

1210. *E. B. La Salle*.—"Profile Portrait." The profile is always made more intelligible and pleasing by the management of the light so that it comes in rather directly from behind the head. Where you bring the same directly against the light, as in your photograph, you fail to get the forehead, cheek, nose and chin in an agreeable half-tone; you get merely a meaningless silhouette. A profile really ought to show low relief. You must have the principal light upon the upper part of the temple, the cheek-bone and the ear, while the principal shadows lie under the hair, under the eyebrow, close to the nose. The whole of the front of the iris must be light except close under the eyelashes, not a blur of the eye as is shown in your picture. You did well not to under-expose, for a profile needs a good ex-



No. 1212. *Data*.—2 1/2 x 4 1/4, No. 2A Folding Buster Brown; f/11; June 8.30 a. m., good light; 4 seconds exposure; M. Q. developer; Noko paper print.

posure. Try the effect of regulating the light by means of screens. The slightest difference in the angle at which the top or side light falls upon the head makes either a picture or a blur. Profile-making requires much care and judgment. Your composition is very good.

1211. *Wm. B. Reiley*.—"Profile Rock." Interesting for local association, and illustrative of legendary lore, but not presenting features for critical remarks otherwise than the good technical quality of your work.

1212. *Kathryn Miller*.—"An Interesting Call." The motive of the picture is well carried out. The model is well posed and



No. 1214. *Data*.—No. 2A Brownie; December 3 p. m.; 3 seconds exposure; Cyko M. Q. developer; special portrait Velox print.

lighted, and the expression indicative of the action displayed, natural and unconstrained. The accessories also are well placed to aid the composition, and the background setting indicated with sufficient detail and emphasis to lend value to the subject without being too pronounced. There is considerable contrast in the picture, but it is not in the least unpleasant, and serves well to emphasize the principal feature.

1213. *Edwin Bradley*.—"January Landscape." The composition is rather pleasing, but the illumination is too flat even for such a subject. Even under a cloudy sky there ought always to be some points of accentuation, but even the stream here and the sky are of the same uniform tone as the rest of the landscape, and this makes the view too monotonous.

1214. *Wm. J. Kennedy*.—"Amused Interest." The pose of the figure is good, the action well indicated, but the illumination necessarily makes the subject unpleasantly full of contrast. The lower part particularly is a mere blank space of black. We are aware of the difficulties attendant upon such a scheme of illumination, but then you should not attempt such subjects without proper study to overcome the difficulties. It would be impossible here to go into detail of the way to manipulate, but we might suggest that you had it in your power to soften, at least, the illumination upon the face, and to reflect some little light in the obscurity below.

1215. *A. G. Sherman*.—"Snow Scene." A charming snow scene of most excellent technical quality, and possessed of considerable artistic merit. The textural quality of snow is adequately presented. It looks like snow, and suggests the atmospheric surroundings. The photographer has secured this by judicious exposure and careful, painstaking development. He has chosen the proper illumination so as to secure softness and wealth in the shadows, and has given ample time for the film to register both with the fine result here obtained.

1216. *W. R. Laity*.—"Entrance to the Wood." The composition is unbalanced. The great mass to the left has nothing to compensate it upon the right, and there are no tonal values expressed. Everything is in one uniform tone. You will improve the subject somewhat by cutting off a couple of inches of the foreground, and also a portion of the view on the left side.



No. 1216. *Data*.—Goerz Dagor lens; stop 16; 6.30 P. M.; $\frac{1}{2}$ second exposure; Cyko print. The important data was forgotten by the photographer.



No. 1218. *Data*.—4 x 5 Century; U. S. 16; June 9 A. M., bright light; 1-5 second exposure; M. Q. developer; Azo hard print.

1217. *James Bowers*.—"November Afternoon." It is not often that a landscape in which the trees have been deprived of their most attractive adornment, their leafy dress, presents features which lend themselves readily to pictorial effect by means of photography. The bare boughs become monotonous by their repeated occurrence, and the photographer has not the resource of the painter in the aid which color affords for pictorial expression. But, despite all this, you have succeeded in producing a very pleasing picture, possessed of much sentiment and of a good expression, characteristic of the time of year it represents. The composition is particularly good. The lines are well balanced, and the masses of light and shade well related and appropriately kept in the minor key. The perspective is fine, and the sky effect has that recession which suggests atmosphere in which the clouds naturally float.

1218. *James Slater*.—"Summer." A pleasing outdoor study. The figures are well associated and nicely posed in a natural and graceful way. The lighting is particularly good, soft, and at the same time possessed of sufficient contrast to give the proper relief and atmospheric setting.

1219. *W. H. Schammel*.—"What's Beyond?" This is not a true naturalistic reproduction of impressionism. Impressionism in the true sense is Nature interpreted by art



No. 1220. *Data*.—4 x 5 Cycle Poco; R. R. lens; f/11; November 10 A. M., bright sunlight outside; $\frac{1}{4}$ second exposure; Duratol-Quinone developer; Azo C hard print.

sentiment. But true impressionism never falsifies Nature to misrepresentation of the actual. The camera and lens have here been employed as a means for getting an impression of form and distorting the planes of presentation, of presenting no actual phase of Nature, but something which is impossible, all the planes of the picture of equal intensity. It is neither art nor good photography, but a mere nondescript which does no credit to art as applicable to photography, and certainly does injury to the proper function of photography as a means of artistic expression. The pity of it is that the subject has features which would have lent themselves to artistic expression, showing that the photographer had a nice appreciation of the pictorial value of line and mass, but the obsession to a particular cult induced him to a false rendition.

1220. *Chas. D. Meservey*.—"Eleanor." A most effective piece of lighting, managed with skill and feeling, and a very pleasing study, full of soft high-lights and rich gradated luminous shadows. The lighting of the face is particularly good. It brings out the essential expression of the little subject, which is natural and unconstrained. The rendering of the drapery and the relation of the model to the background exhibits good taste in management of the accessory, and an appreciation of the value of portrait perspective. A very commendable portrait study with a painting-like effect.

1221. *J. S. Folk*.—"First Spring Flowers." Your mishap as regards the camera's position does not seem to interfere with the presentation of the flowers. Their structural characteristics are shown quite as well as in other positions. The fault lies in your excessive over-exposure and flatness of image, which has destroyed the texture presentation of the blooms and all their high-lights. The arrangement is too formal to be pleasing.

1222. *J. Douglas Smith*.—"Footprints." This is a charming piece of composition, per-

vaded with a sentiment which makes it a real picture of that time of year "when yellow leaves, or none or few, do hang upon the boughs." The composition is excellent, and the textural rendering of the snow effective. The foreground has been managed with much artistic feeling, and with a nice appreciation of the value of lines and contrast of slightly differentiated lights and shades.

1223. *L. H. Hayes*.—"Tangents." A very good piece of work to exhibit the features of trolley construction of practical use to an electrical engineer, but not possessed of the slightest pictorial value. Good photograph, that's all.

1224. *Suisai Itow*.—"Sunlight and Shadow." The texture of the snow is well presented, and the contrast of light and dark is strong, as is naturally to be expected under such conditions of exposure, but not at all unpleasant. The diagonal trend of the picture adds much to the view by presenting a pleasing perspective.

1225. *Hans Einarson*.—"Snow Scene." Considerable of what is picturesque and novel in the composition, which confers not a little



No. 1222. *Data*.—5 x 7 plate camera; R. R. lens; f/8; December 4 P. M., bright light; 1-25 second exposure; M. Q. tray developer; normal Cyko print.

sentiment to the picture. The modulation of the light and shade in the snow is very pleasing and so trifling a feature as the introduction of the small, bare twigs in the foreground with the mass of modulated high-light adds much to the interest. The atmospheric effect in the distance is also a most pleasing feature.

1226. *Chas. G. Smith.*—"Hi There!" The subject is well treated. That is, the action is good. The photographic quality could have been improved by a little judicious development to keep down the excessive contrast, which is so prone to manifest itself in subjects like this. Read some of the papers published in *THE CAMERA* on snow photography.

1227. *Linda E. Cattell.*—"Winter." It would have been better to have confined your attention exclusively to the large tree, and have given us more of its picturesque features. It evidently is a good subject for a picture. The smaller trees present nothing pictorial, and only detract from the general effect. Your work is very much undertimed. A subject like this presenting so much contrast demands full time—at least a couple of seconds. Then you bring out snow texture much better.

1228. *H. A. Dahl.*—"Just Before the Stroll." The subject is a good one, and well supported by the surroundings which help to interpret it. The lighting also is quite effective. The little girl who supplies the motive power is, however, a little too self-conscious. She is not interested at all in her occupation, but is wholly intent upon the result of the camera.

1229. *James V. Dunham.*—"Fruit Study." The photographic quality is good, but the grouping is poor. There is no attempt at composition. It is a mere jumble of things, and no regard shown for the value of light and shade in the objects represented for pictorial expression.

1230. *H. P. Palmer.*—"The Old Road." The chief fault is in the improper lighting. The whole suggestion of space relation is destroyed. There is no depth to the picture and no atmosphere, no receding and no aerial perspective.



No. 1224. *Data.*— $3\frac{3}{4} \times 5\frac{1}{2}$ Folding Pocket Kodak; Dagor lens; U. S. 8; January 2 P. M., bright sunlight; $\frac{1}{4}$ second exposure; pyro developer; Azo E hard print.



No. 1231. *Data.*— $3\frac{3}{4} \times 5\frac{1}{2}$ Premo; R. R. lens; f8; May 10 A. M., bright light; $\frac{1}{4}$ second exposure; Nepera developer; Azo hard print.

1231. *Alex Aldridge.*—"Viola." The study of the child is good, expressed with much sincerity and simplicity, bringing out in a natural and unconstrained childlike way the expression of innocence. It is a pity, however, that you did not have more judgment in the selection of the background. The management is very bad, particularly the abrupt bar of black directly upon the shoulder. A nicely graduated ground would have given proper relief to the figure which it does not have.

1232. *Margaret Culley.*—"Rustic Bridge." The main feature of this subject is not in sufficient evidence, even its rusticity is not particularly shown, and so gives us little opportunity of judging either of the artistic or photographic quality of the work. From as much as we are able to determine, from the minute size of the picture, a closer-up view, bringing out the features, only here visible with the microscope, would have presented a good effect.

1233. *G. P. Lehmann.*—"Point Judith, R. I." Only interesting for local associations, and possessed of no art value, besides it is not

good photographically. The illumination is improper. The light should fall on the buildings so as to get one side in shadow to exhibit a relief. Your photograph is entirely too flat. It gives no idea of projection, no solidity to the houses.

1234. *Ruth Huey*.—"The Temple." The illumination is too vertical, and the result is flatness of presentation. The building has no relief, and the different parts of the architecture are not properly differentiated; all upon the same dead level, and the perspective of the view is not brought out. There is no receding of parts. The mass of water in front looks like a vertical wall, not a level surface. The view should have been taken at an earlier or a later time of day.

1235. *Claud V. Deming*.—"A Quiet Drive." There is no attempt at composition here, though there are indications that such might be discovered by one of artistic feeling. The character of the vegetation seems to present a ready motive. It would even have been better to make the carriage the principal motive, and not such an insignificant feature. As it is placed it really obstructs the view, and has nothing in itself to warrant the placing of it directly in the centre of the view.

1236. *James Stokley, Jr.*.—"A Rainy Evening." The view would have been much improved had you placed the camera so as to include the bend in the stream. This would have given a glimpse of the distance which always adds to the pictorial effect of a scene. You show only two planes of the picture, and you might have shown the third, and thus brought out better the perspective.

1237. *J. B. Gale*.—"Winter." The print is entirely too hard and contrasty. The snow is not at all adequately presented. It looks more like whitewash on the roofs or a spattering of flour on Christmas trees. This bad effect is due to the inadequate exposure of a subject presenting considerable contrast in itself. Snowy scenes demand a full exposure and a most careful development.

TO IMPROVE BLUE-PRINTS

Blue-prints made by the ferro-prussiate method are extremely cheap, but rarely entirely satisfactory. The shadows are stuffy and the general appearance is flat. The following treatment will give notably better pictures, especially as to brilliance and details.

Expose the print a little longer than usual, and immerse at once in a bath of 100 parts of water and 1 part concentrated ammonia. Leave it in this for about five minutes. Then wash abundantly. The picture will now be very weak and of a pale gray color. Develop in a solution of 5 parts citric acid in 100 parts water. The picture first takes a greenish color, which changes quickly to blue. Finally, wash well.—*Revue Photo. du Sud-Est*.

HYDROQUINONE IN WINTER

There are certain topics in photographic practice, which, like the appearance of comets, have a periodical recurrence. And at the approach of the winter months, we are reminded that it is pertinent to refer to one of these topics, however often it may have been reiterated; that is, the sensitiveness of hydroquinone to cold. Hydroquinone from its tardy solubility in water as compared with pyro and some of the other developing agents, requires to be looked at when in solution when there is a spell of cold weather. Pyro, under such conditions of temperature, exhibits no abnormal behavior, because of its greater solubility. It keeps intact, even at a temperature below freezing point. Hydroquinone dissolves very slowly in winter even at ordinary temperature and when the temperature falls below 60 degrees Fahr., portions of it are deposited and the strength of the solution diminished considerably and its developing power accordingly. The moral of all this is to keep your stock bottle of hydroquinone where the temperature of the room is up to 70 degrees and you will not spoil so many plates nor blame the makers.

FIXING BATH STAINS

Of the many examples of stained prints which come before us week by week, probably the majority arise from incomplete fixing in one way or another. Such deficient fixing may be general or local—the print may not be treated long enough in the hypo bath or the bath may be one in too great state of exhaustion. We think it is common knowledge that during the past year, owing to the employment of new descriptions of paper base, more thorough fixation is necessary in order thoroughly to clear out the excess of silver compounds. On that account the advice to use two fixing baths in succession is one which should not be neglected, for the practice represents the best means which can be taken for the complete fixation of developed prints. But even the use of two baths, unless they are very large in proportion to the number of prints treated in them at a given time, will not obviate the danger of local deficiency of fixation. Very often the fixing bath becomes so full of prints that it is almost impossible to place other prints, as they should be placed, below the surface of the bath. With many papers, immediate immersion in the hypo bath is a necessary condition of absence of stains, and where patchy stains on the final print are found to occur in an erratic manner we should be inclined to suspect want of complete immersion in the first instance as the cause. In that event a good plan is the one we suggested some time ago—viz., to let each print have a minute or so in a hypo bath and then to transfer it to the main bulk of the prints in a second fixing solution. The method ensures each sheet of paper being fully exposed to the fixer.—*The British Journal of Photography*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

New subjects are the life and soul of the motion picture theater program, and this applies equally well to the multiple reel photoplay as it does to the short travel film.

Who has seen Boston on the film? Nobody; for the cinematographer has yet to record the interesting features of that city, and the same is true of most other cities.

A recent Essanay travel film proved an eye-opener to me, a New Yorker. For years I had regarded Vancouver, British Columbia, as a wooden shack type of Western town, yet I found it modern in every respect, with pretentious buildings and prosperous looking homes.

Now, if a scenic subject can surprise me, hardened as I am, then its effect on the average fan is certain to be equally favorable.

Were a census to be taken of the travel films put on the market, it would be revealed that the majority of them present European subjects. I am exceedingly glad, however, to note that those produced on native soil are being pushed to the fore, and you, the free lance motion picture photographer, can do much to increase their popularity with profit and prestige to yourself.

If operating in a fairly large city, you should expose film on the principal thoroughfare; single out the largest office building, church, park, theatre and places of historic interest. It might be as well to take in the chief industries.

Towns only in name seldom make good subjects, as city dwellers are not in the least interested in some typical small town unless it possesses certain distinguishing features. Rather, however, than waste your valuable raw stock on commonplace details, it should be worth your while to devote a film to each object.

Once you get away from the cities and towns, you will find much other valuable material. Here are a few suggestions: mountains, health resorts, various phases of agriculture, rivers, woods and freaks of nature.

You cannot do better than equip yourself with a compact professional make of camera and a light, firm tripod. Do not overlook the turning and tilting top. In this connection I would recommend the Universal, Newman and Sinclair, Reflex, Debie and Pathe Portable.

The best kind of lens to use is the telephoto, as they enable you to secure close-up views of an object some distance away,

which is advisable if the task involves considerable risks.

It is not for me to say how many rolls of film you should carry—this will mainly be governed by the circumstances. A couple of four-hundred-foot rolls would probably prove an ideal consignment if you only made a trip to one place, but if you were covering a certain territory, stopping off at all likely spots, then you would have to carry much more raw stock.

You might be able to obtain supplies locally and then you might not, but if you wish—and I assume you do—to reduce your baggage to a minimum—it is best for you to arrange for supplies to be sent on ahead.

You will, of course, map out your route by a guide-book, in which you will doubtless discover data suitable for capitalizing. Next draw up the scenario of a prospective subject, allowing so many feet to each incident, according to the importance of same.

Now and here is where so many independent motion picture photographers fail. You should not worship that scenario as though your life depended on it; regard it merely as a rough draft, for when you reach your destination you will, in all probability, find interesting things left out of the guide-book, while others which you had planned to cover do not justify five feet flashes.

The actual taking of a single subject may not consume more than ten minutes, yet do not yield to the temptation of rushing things. Go over the ground thoroughly in advance, so that you can plan for the best effects and waste comparatively few negatives.

To my mind, travel films, which switch abruptly from scene to scene, resemble the stereopticon plan, which you want to get away from at all hazards. The traveling effect is the best way to avoid this, so place the camera firmly at the back of an automobile or some other vehicle and turn the crank when it is in motion.

Another plan, which has its good points, is to panoram, by turning the tripod in any particular direction.

Do not work on rainy days under any circumstances, as a speck of rain is liable to fall on the lens and shut out the light.

Spare no pains to obtain clever effects, for the fans rave over artistic moonlights and sunsets, reflections from the water, views showing a wide range of scenery and the like.

You cannot be too sure, and it is far better

to detect a fault in the first negative in preference to it spreading to the remainder. For this reason I would advise you to take a rough and ready developer, which should comprise a little bottle of Tabloid M. Q. developer, a small tin of fixing salt and a quarter plate volcanic dish.

Before you retire, after a day's work, test the negative in your room. Cut just a strip off and develop it in the same way as you would a photographic plate. This, when developed, will reveal whether anything is wrong with the negative as a whole.

In regard to possible markets, most of the following producing concerns are generally in the market for snappy negatives:

Universal Film Manufacturing Company, 1600 Broadway, New York, N. Y.

Essanay Film Company, 1333 Argyle Street, Chicago, Ill.

Mutual Film Corporation, 71 West Twenty-third Street, New York, N. Y.

Paramount Pictures Corporation, 485 Fifth Avenue, New York, N. Y.

Pathe Exchange, 25 West Forty-fifth Street, New York, N. Y.

Gaumont Company, Liberty Avenue, Flushing, L. I., N. Y.

Variety Films Corporation, 126 West Forty-sixth Street, New York, N. Y.

Educational Films Corporation, 729 Seventh Avenue, New York, N. Y.

I firmly believe that co-operation between editor and contributor results in a better understanding to both parties. With my extensive experience of magazine and newspaper editors, I think I am qualified to speak with authority. Free lance journalism is as old as Adam, if I may so put it, but free lance motion picture work is still in its swaddling clothes, and it is only to be expected that the standing between those concerned leaves a good deal to be desired.

But it is highly evident that a new era is dawning when editors of two of the leading national animated newspapers go so far as to actually ask free lance cinematographers to apply to them when in doubt.

Now to account their deeds, Eric E. Mayell, Editor of *The Pathe News*, has gotten out a booklet of sixteen pages entitled, "Hints to News Film Cameramen." The size is no indication of its true worth; there is more "meaty" material packed within its pages than is contained in some volumes. The author, P. D. Hagen, certainly knows his subject, and the advice is so practical that no motion picture photographer can afford to overlook it.

This is how the booklet concludes: "Make as good a picture for others as you would like others to make for you."

I understand that Mr. Mayell will be glad to mail a copy to any free lance who cares to write him at Congress Street, Jersey City, N. J.

Pell Mitchell, Editor of *Mutual Weekly*, has issued the first number of what he has

christened *Mutual Weekly's Pocket Edition*. Despite the misleading title, it is a printed publication and contains many hints of value to camera men, but where the co-operation comes in is that all *Mutual Weekly* correspondents are cordially invited to contribute any suggestions of value to their brother operators.

This inspiring magazinelet will appear at intervals, and to be included on the mailing list you have only got to write Mr. Mitchell at the Gaumont Laboratories, Flushing, L. I., N. Y.

In the course of a fairly long article on "Every Town With Its Own Zoo," and which appears in March *Motion Picture Classic*, I bring out some points of interest to the cinematographer. Here is the gist of them:

"Abolish ordinary zoos and replace them with motion picture zoos. From time immemorial the big cities have enjoyed the monopoly of the ordinary kind, whereas, if the reformation came to pass, every small town would be in a position to boast of its own motion picture zoo, with films of all kinds of animals, birds, insects and fishes known to be in existence.

"The present municipal zoos give us no time to study the distinctive habits of animals; a lifetime would be required for even a fair working knowledge.

"The most suitable place in which exhibitions could be given would be in the public library. The funds for same would be very nominal, and could easily be provided for out of the taxes.

"The library could obtain its collection by buying a positive copy of every suitable natural history subject from the producers, and with such encouragement that companies would be formed to produce pictures exclusively for the motion picture zoos.

"At an appointed hour daily the whole collection of motion pictures could be run through for the edification of visitors, who would learn more in few hours than in a thousand visits to the ordinary zoo, and at the same time find the new method the more entertaining of the two."

In which State is the best motion picture photography obtained? To quote Dr. Ford A. Carpenter, a forester of the United States Weather Bureau:

"The maximum sunlight falls on a very limited area, in which lie New Mexico, most of Arizona and Nevada, a small part of Utah and about half of California. In Southern California the desert has been reclaimed to a greater degree than is elsewhere known in the world.

"Our least sunshine (63 per cent) is in May; our maximum in August (79 per cent). December and May sunshine are about equal. Such conditions are ideal for motion pictures."

These significant facts and figures account for eighty per cent of American photo-plays being produced on the Pacific Coast in and around Los Angeles.

Texas means to carry out its educational campaign well, for the State officials have commissioned a New York film company to "shoot" fifty reels of Lone Star State scenes. It is intended to show the pictures free in numerous large cities, and when the circuit has been covered the film will remain in the keeping of the State Library and Historical Commission at Austin, Texas.

Raymond L. Ditmars, curator of the New York Zoological Park, needs no introduction. He is without a rival in the natural history film field, and seems to go one better with each subject. His latest achievement is teaching insects to act, and his results are shown in "Gathering of the Clans," released under the Paramount banner. The principal attraction of this film is an eating race between a monkey, grasshopper and caterpillar.

As shedding light on his methods, I might mention that before filming the skunk on the film he obtained a real wood-bred skunk from a farmer who had captured one alive in a trap. Mr. Ditmars carried the skunk to his studio in an asbestos box and succeeded in breaking him in in three days, when he got busy with the camera and some formaldehyde.

The movie theater promises to become the deaf man's academy. It is only a matter of time till the films are used to teach lip-reading as it has never been taught before.

Today, without malice aforethought, the sliding films are training the whole public, hearing and unhearing, to see the spoken word. When the movie villain thunders, "You lie!" or the hero snaps back, "Coward!" does the audience need the lines flashed on the screen to interpret? Indeed, if habitues of film theaters will take pains to examine themselves, they will be amazed to see how large a vocabulary they are amassing of lip-reading language. Consider then what might be done with films prepared for the purpose of conveying visible speech.

Upon its singular power to juggle with the tempos of life, the moving picture camera has depended from the first for the most fantastic of its grotesqueries, the wildest of its melodrama. The hero's touring car, photographed in the act of continually crossing the rails directly in front of a crawling, hired locomotive, shoots through the picture machine at lightning speed, harrowing the audience with its hair-lifting near-tragedy. More recently the films have shown us certain slow mysteries of nature—the birth of a butterfly, the opening of a rose, sundew devouring a fly, the etching of frost-flowers on the wintry window-pane. Spying patiently for hours or days, or repeating its observations at stated intervals, the camera reports these minor miracles of nature with the movement accelerated to the point of dramatic intensity.

For the teaching of lip-reading, liberties would be taken with the tempo the other way round—the films would be considerably slower than life. The model would need to be a movie actress of engaging personality and

a face that would bear photographing close up. Mary Pickford would do nicely, thanks. She would recite for the camera-man, taking thought to the clearness of her enunciation, bringing into play all her interpretative arts of gesture and expression. Taken at normal tempo, that the model might speak naturally, the film would be run off before a class of lip-readers at slowed speed, as the phonograph grinds out with deliberation foreign phrases for the student of language.

It is easy to see how the thing would be done. For a primer class the teacher on the curtain would begin by showing the vocal gymnastics involved in sounding the letters of the alphabet, holding up the printed letters as she reads them off. From this the class would pass to sentences, then to familiar rhymes, where memory would help the eye. The lip-readers seated in the dark would be freed from the fatal panic which makes the deaf man always self-conscious in his dread of being betrayed in absurd mistakes. In course of time graduates of the course would have a vast advantage over hearing-spectators at the film play, for they would read all the lines, even those of the by-play, upon the pictured actors' lips.

One sees in this also an opportunity for teaching speech to the dumb.

Too costly? Well, so are books in Braille type. Is there any reason why Washington should not loan lip-reading films all over the country as the Congressional Library now loans the blind man's books?

COATING FOR BLUE-PRINT PAPER

Economical Method of Preparing Potassium-Ferri-Cyanide Solution Developed by the Department of Agriculture, Washington, D. C.

As a result of the great increase in the price of potassium-ferri-cyanide, or red prussiate of potash, which is extensively used as a coating material for blue-print paper, an economical method of preparing the substance has been devised by the Department of Agriculture. Before the beginning of the war, potassium-ferri-cyanide could be obtained for 55 cents a pound. It now sells for about \$6.00 a pound and, moreover, it is exceedingly difficult to obtain in this country even at that price. Since blue-print papers in this country are coated almost exclusively with potassium-ferri-cyanide and all coating, blue-printing and washing equipment is built for use with this as the coating material, the rise in price has worked quite a hardship upon both the producers and users of blue-print paper.

Potassium-ferri-cyanide is produced by oxidizing a solution of potassium-ferrocyanide with chlorine gas. At the same time a small amount of potassium chloride is produced. Investigations by the Bureau of Chemistry show, however, that the pres-

ence of this amount of potassium chloride in the coating of the paper does not interfere with the color and durability of the print. It is unnecessary, therefore, to separate the potassium chloride by crystallizing the potassium-ferri-cyanide, provided that the latter is to be used on the spot and soon after it is prepared.

The apparatus devised by the Bureau of Chemistry for preparing in this way potassium-ferri-cyanide solution is simple. The chief precaution to be taken in its operation is to see that the finished solution does not contain an excess of chlorine. At the prevailing prices of the materials, potassium-ferri-cyanide solution can be made by this process at the cost of approximately \$2.80 per pound, calculated on the dry salt basis. At the prices which prevailed before the war and which may be regarded as normal, the cost would be approximately 35 cents per pound.

Allowing for possible loss, 100 pounds of potassium-ferro-cyanide should yield about 75 pounds of potassium-ferri-cyanide. Probably 10 pounds of chlorine would be required also. That is, 1 1-3 pounds of potassium-ferro-cyanide oxidized with approximately $\frac{1}{8}$ pound of chloride, would yield 1 pound of potassium-ferri-cyanide.

In February potassium-ferro-cyanide was quoted at \$2 per pound and liquid chlorine can be obtained in iron cylinders for 15 cents a pound. At these prices, as has already been said, a pound of potassium-ferri-cyanide in solution can be made for approximately \$2.80 per pound, whereas it is now quoted on the market at \$6 a pound.

This saving is, of course, much greater than under normal conditions, when technical potassium-ferro-cyanide can be obtained for 25 cents per pound and technical potassium-ferri-cyanide for 55 cents per pound. The price of the potassium-ferri-cyanide at all times will be greater than the price of potassium-ferro-cyanide, since the former is prepared by oxidizing the latter with chlorine, followed by repeated crystallizations to separate the potassium chloride formed at the same time. It seems probable, therefore, that even under normal conditions the simple procedure devised by the Department of Agriculture for the preparation of potassium-ferri-cyanide solution will prove profitable for users of large quantities of blue prints.

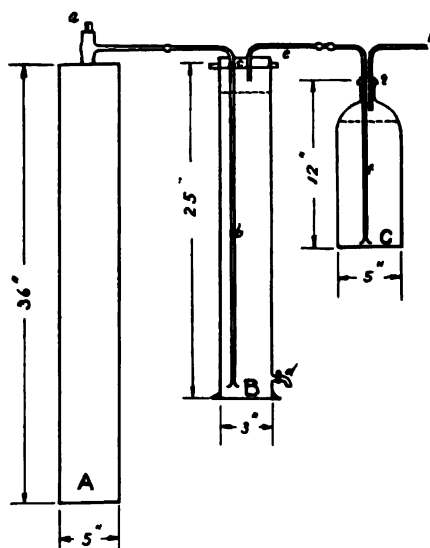
The necessary apparatus has been developed primarily for use in the government service, but it is equally available for other purposes. The method and apparatus for making potassium-ferri-cyanide are described as follows:

METHOD AND APPARATUS

Apparatus.—This apparatus is designed to produce one pound of potassium-ferri-cyanide from 1.33 pounds of potassium-ferro-cyanide. *A* is a cylinder containing chlorine, *B* is a glass cylinder three inches

in diameter and twenty-five inches in height, capacity approximately $\frac{3}{4}$ of a gallon (Eimer & Amend Catalog 2496), in which the solution of potassium-ferro-cyanide is placed. *C* is an ordinary acid bottle containing a solution of sodium hydroxid for absorbing any excess of chlorine which may be unabsorbed by the solution of potassium-ferro-cyanide. The glass cylinder *B* is fitted with a glass petcock (*d*) near the base for withdrawing a portion of the solution for testing completion of oxidation. At the top it is fitted with a three-inch cork (*c*) sealed with paraffin having two holes to accommodate the glass tubes (*b* and *e*). One of these tubes (*b*) extends to the bottom of the cylinder and is blown at the end to well distribute the gas. It is connected by a short piece of rubber tubing to the pipe attached to the chlorine cylinder. The other tube (*e*) which does not touch the surface of the solution in cylinder (*B*) is connected by a rubber tube to a glass tube (*f*) running to the bottom of the acid bottle and blown to distribute any gas which may not be absorbed in *B*. Bottle *C* is fitted at the top with a cork (*g*) sealed with paraffin and having two holes through which pass tubes. One of these tubes (*f*) runs to the bottom of the bottle, the other (*h*) starting from above the liquid is so connected as to carry unabsorbed chlorine out of doors. The chlorine gas is regulated by a valve (*a*) in the head of the chlorine cylinder. The glass tubing used should be $\frac{1}{8}$ inch inside diameter.

Operation.—Dissolve 1.33 pounds of potassium-ferro-cyanide in about $2\frac{1}{2}$ quarts of distilled water and pour into cylinder *B*. Nearly fill bottle *C* with a ten per cent. solution of caustic soda. Connect the chlo-



rine cylinder with tube (b) by means of a short piece of rubber tubing and tube (e) with tube (f) and finally run a tube (h) from bottle C out of doors. Turn on the chlorine gas and allow it slowly to bubble through the solution of potassium-ferrocyanide. Shut off the chlorine at intervals of a half hour or so and to aid the absorption of the gas shake or agitate the container. Do not allow the caustic soda solution to suck back when the gas is shut off. This can be prevented by breaking the connection between B and C immediately after shutting off the chlorine. Continue passing the chlorine into the potassium-ferrocyanide solution for some time after the color has darkened considerably. After which frequent tests are necessary to determine when the oxidation has been completed. To test for complete conversion to the ferri-cyanide, draw off a little of the solution through the petcock (d), dilute with distilled water and test with a solution of ferric chloride. If a blue precipitate is formed potassium-ferro-cyanide is still present and the process must be continued. If a brownish or amber colored solution results, the oxidation is complete. After tests show the oxidation to be complete, turn off the chlorine gas, disconnect the chlorine cylinder and connect (b) with an air pressure line. Bubble air through the solution until no odor of chlorine is noticeable. In case air pressure is not available and suction can be obtained, break the rubber connection between tubes (e and f) and connect (e) with the suction and draw air through the solution until free of chlorine.

Great care must be exercised that no chlorine escapes into the room and comes in contact with the flesh, as it is a powerful irritant and serious injury may result to the throat, nose, eyes and hands from exposure to the fumes or contact with the liquid.

TO GET RID OF HALO

Halo, or halation, is caused by the light-rays which, after passing through the sensitive coating, are reflected by the back surface of the glass and make an additional impression on the emulsion. This impression is made mostly in the layer of gelatine next to the glass. To get rid of it, bleach the negative after developing, fixing and washing, in

Water.....	300 c.c.
Potassium bichromate.....	5 grams
Potassium bromide.....	2½ grams
Nitric acid.....	15 c.c.

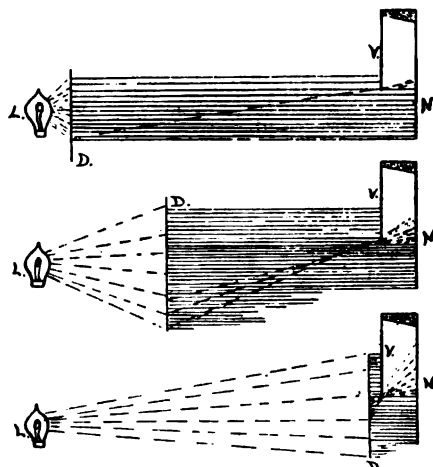
When fully bleached, wash copiously and redevelop in a pyrogallic acid developer, strongly bromided. This acts only on the surface of the plate. When sufficiently blackened, fix in hypo and wash.—*Revue Photo. du Sud-Est.*

VIGNETTING ON DEVELOPING PAPERS

D. BERLIN

Many seem to have some difficulty in getting satisfactory vignettes on bromide and gaslight papers. As a matter of fact, it is rather easier than with daylight processes if gone about in the right way, as the conditions are more under control. Whether one uses a frame or a proper printing-box the principle is the same. A standard distance from the negative to the vignetting card is desirable, say, about an inch, and in most cases the source of light should be central with the hole, or the resulting vignette may be one-sided.

The controlling factor is the diffuser and its position relative to the light and the opening of the card. The nearer to the light the diffusing screen is, the sharper will the edge of the vignette be, and the nearer to the card the softer the gradation. The reason for this will be seen on reference to the diagram, in which L is the light, D the diffuser, V the vignetting card, and N the negative. If we regard the diffuser in each case as the source of printing light, it is obvious that the direct rays which pass straight through the aperture to the



negative are more powerful than the diagonal ones from the margins. Also the nearer D is to V, the further up on to N can some of these diagonal rays get.

In practice the method is to have a movable diffuser. Where a printing frame is used on a shelf, a wooden frame holding tissue paper or ground-glass, is stood in front of it. In a printing-box a removable glass shelf is fixed about an inch below the top on which to lay vignetting cards, and below that a series of pegs or wooden strips on to which can be slipped a sheet of ground-glass or a tissue-covered frame at various distances. It is preferable to be able to adjust this by a door at the front of the box to avoid shifting the negative and the vignetter about.

In some cases it may be found necessary to use cotton for specially thin parts just as in daylight work. In extreme cases, where the background to be vignetted is rather dark, it may be necessary to have another sheet of tissue on the hole in the vignetting card itself, and in such cases I have found that still further softness of vignette can be got by matt-varnishing the negative. It is surprising what an improvement is sometimes obtained by this slight extra diffusion.—*The British Journal of Photography*.

MECHANICAL AID TO COLOR RENDITION

Few practical workers will agree with the assertion, "that the only control over development which the photographer has lies in securing a greater or lesser density of image, and that he has no control whatever over the gradations of the negative." Experience disproves this, indeed refutes it. By a judicious disposition of the components of the developer, the range of gradation is exalted materially and even the translation of the so-called non-actinic colors is better made. Besides, the intelligent and discriminating use of the diaphragm results in the better rendition of color values. The employment of a small stop cuts off the intensity of the light from the more refrangible end of the spectrum, the over-active blues and violets and the necessary prolonged exposure incident upon the use of a small diaphragm, gives the yellow greens and even the reds opportunity to impress themselves before the blues get over-exposed. In this way even upon a non-orthochromatic plate we get an approach to correct color renditions. It follows, therefore, that Hurter and Drifffield's dogma has no validity in practice.

RAPID PLATES MORE SENSITIVE TO RED LIGHT

The highly sensitive film is much more susceptible to the influence of red light than plates of ordinary degrees of sensitiveness, that is what we usually denominate as "slow emulsions." Hence the particular advantage in the use of very rapid plates for portrait exposures. The red tints of the countenance are better presented and the tonal values of the flesh better preserved. It is also well to remember, in this connection, that this red sensitiveness makes such plates peculiarly susceptible to the influence of the ruby light of the dark room. In development, the tray should be kept covered so as not to allow even the feeble red light to act upon them, and examination of progress of development be carefully made for fear of the light action.

Ordinary plates (slow plates) are more sensitive to yellow and orange light, though somewhat sensitive to red, too. We have changed plates in the holders by the reflected light of a candle, but it is hardly good advice to recommend such procedure.

TEN PER CENT SOLUTIONS

If the formulæ are based on some system, generally a dram relation to the ounce, necessitating trouble to calculate to get proportions, by the use of the ten per cent solutions the relation is easier attained.

If, for instance, you desire to know how much of the solid content, you need simply remove the last figure and you have the number of grains or minims. Say you want to know how much there is in half an ounce, equal to 240 minims; take away the cipher and you have 24 grains. Misapprehension as to the way to make a ten per cent. solution arises from confusion of the relation of weight and measure which does not arise when the decimal system of weights and measures is employed. We have our measures graduated to ounces, drams and minims. The dram contains 60 minims, the ounce 8 drams or 480 minims. When you remove the cipher, it shows that an ounce of a ten per cent. solution contains 48 grains not 48 grains plus one ounce of water, but 48 grains in an ounce, which is quite a difference.

IKONOGEN

Ikonogen, or, as the German patentee writes it, Eikonogen to accommodate German pronunciation of the Greek which means "image maker," an ideal name, by the way, for this developer, was first discovered in 1880, by Raphael Meldola, an English chemist, while studying the action of nitroso compounds on phenols. Dr. Anderson, of Berlin, however, patented the product and placed it on the market under its present name.

Aromatic-nitroso compounds, when treated with reducing agents, are converted into the corresponding amido compounds, and it was in utilizing this reaction that Meldola obtained the first amido-sulphonic acid of beta-naphthol ever known, which, when converted into its soda salts, constituted what we now call "eikonogen." The cost of making this developer ought to be low, inasmuch as waste products in the preparation of some of the other someric-sulpho-acids of beta naphthol are used. The price is kept up only by the monopoly due to patent right.

SULPHATE OF IRON AND SALT AS REDUCER

A writer in *Wiener Mitteilungen* recommends the following for reducing very hard negatives. The negative is first softened by soaking in water and then placed in the following bath:

Water.....	100 parts
Copper Sulphate.....	5 parts
Common Salt.....	5 parts

Leave the plate in this until it has turned completely white, which usually takes from ten to thirty minutes. It is then well washed and reblackened in full daylight in any regular developer slightly diluted.

E. K. Tested Chemicals

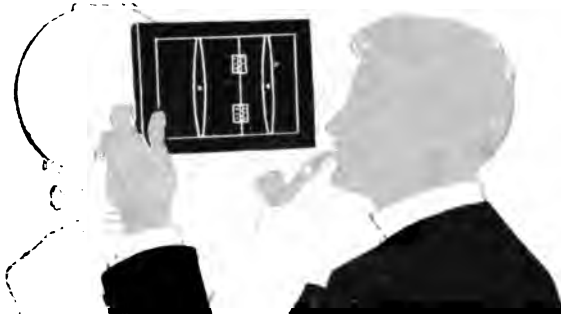
are exactly what the name implies
—chemicals that have been carefully tested by the Eastman Kodak Company and found to fulfill its necessarily exacting requirements.

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it makes you certain:*



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Volume Twenty

MAY 1916

Number Five

AS A GIFT—C. H. CLAUDY

FEW hobbies offer the possibilities of photography in pleasure to oneself. None offers the possibilities of giving pleasure to others. From the formal portrait of the professional photographer which you offer as a gift to your friends, to those souvenirs you make yourself by attaching a casual snapshot to a calendar, photography provides a never-ending source of presents, gifts and souvenirs, which are unique and unpurchasable.

The newest slogan of the professional photographer, "Your friends can buy anything you give them except your photograph," can be extended to cover the amateur. For no money can buy the gift of labor or of skill, when both are backed by the interest of friendship.

A few of the infinite numbers of ways of using photography for gift-making are listed here, with a few words about each, so that no beginner needs think the portrait or the calendar, the two simplest methods, are the beginning and ending of that catalogue.

The clever photographer, who wishes to use his art in gift-making, never forgets that the armory at his disposal is not emptied with the employment of one "weapon."

Keeping constantly in mind that papers are of many surfaces, that prints can be made in many colors, that glass alone is not the only material on which a transparency can be made, that cardboard is not the only mount nor wood the only frame, that black and brown are not the only colors, and that a picture on paper is not the only possibility of *the* art of all graphic arts, the one who wishes to give a gift which has something more than money behind it, will find it easy—by photography.

A young woman of my acquaintance desired to present to an older woman something which would be in some measure a carrier of her love and veneration. The older woman is wealthy, the young one poor. The few dollars the young girl might spend would be of little use in giving any material object—the wealthy woman could buy it for herself. But not for any money could she buy, or would she sell, the lamp shade she received upon her birthday. The young

woman made it her business to get pictures of six houses where her older friend was accustomed to visit. Some she took herself, others she wrote for, to local photographers.

These six houses—all of them mansions and pictorial in their treatment, standing, as they all did, in beautiful grounds and under trees, the young woman proceeded to make into transparencies *upon cut film*. From a glazier, she had cut half a dozen sheets of ground-glass, and half a dozen sheets of plain glass, all the same size, and all the same odd shape—that of a truncated triangle. The size and shape fitted the panels of a Japanese lamp shade she purchased. With these six glasses and the six transparencies, a lamp shade was made which was entirely unique and which was, I fancy, more acceptable as a gift than anything bought with money the elderly lady received.

The photographer might have had her transparencies cut, after making them on glass. "But that risked the ruin of a whole set," she told me. "If the glazier made a mistake in cutting glass alone, he could easily cut another; but if I brought him transparencies, and he broke one in cutting the set, then I might easily have all to do over, because of the difficulty of exactly matching color. But by using cut films, I cut my own transparencies with a pair of scissors, and when they were bound up with the glass they were as pretty as if made on glass."

Perhaps nothing appeals to the lover of books more than a suitable, personal book-plate. Now a good book-plate costs a great deal of money, particularly if it is in an edition of large size. No one wants a book-plate printed from type on gummed paper—no real book lover, that is. He wants something odd, something no less beautiful than are his books to him, and something worthy of what he rightly regards as the best friends he can have. Result—only one man in ten owns a book-plate.

But any photographer can make a good book-plate and present it to his friend, if he will take the trouble.

The difficult part, of course, is in making the design. Once made and photographed, an edition is nothing but a gross or two of paper, and a little labor of exposing and developing, and as a book-plate should not be too large—two and a quarter by three and a half or four inches is a good size—four may be made at once from four negatives all on one eight by ten plate.

The design can be an imitation of an engraved book-plate if one is clever with pen or pencil. But how much prettier is it if it utilizes *all* the resources of photography. I know one such book-plate which was made from a photograph of the library owner's own fireside. Fireplace, clock, mantle, even a part of a book-case were shown. Then the clever photographer took an enlargement to an air brush artist and had him weave out of the smoke of the fireplace the words "John Smith, His Book" in hazy delicate letters over the upper part of the book-plate. This enlargement was copied in small size, duplicate negatives made and an edition of fifteen hundred given as a Christmas present. The cost in money was perhaps twenty dollars or a little less, but the results were entirely beyond any expectations on the part of the recipient.



"SUNSHINE AND SHADOWS." FIRST PRIZE, THE CAMERA BEGINNERS' COMPETITION NO. 4
E. D. HOOEY, MINNEAPOLIS, MINN.



"A WINTER WOODLAND." THIRD PRIZE, THE CAMERA BEGINNERS' COMPETITION NO. 4
D. A. TIMMONS, PATERSON, N. J.

Place cards for a party of any kind can be bought, but no one can buy place cards or tally cards like those a boy of sixteen made for his sister. It's unusual to find a small brother taking so much trouble for a big sister, but there was some question of a debt, I believe. However, that may be, Robert, who is a snapshot fiend, found he had in his collection the pictures of all his sister's guests. He has a drawing teacher who is not above a bit of fun. So Robert cut out place cards from double weight rough velox, and printed on one end the heads, only, of the various guests. He masked the rest of the negatives roughly with a cut-out piece of cardboard. The results he took to the teacher of drawing, who supplied each head with a unique, somewhat misshapen and funny body. At the same time, the teacher of drawing went over the outlines of the face with the water-proof ink she was using. Robert took her results and bleached all trace of the photograph away by a simple reducer. The result secured was a series of place cards, drawn in ink, each one a capital likeness of some guest. As no one had known Big Sister as an artist, there was considerable mystery at that particular jollification, and every place card was carried home as a souvenir. Not difficult—only a little trouble, but productive of results which could otherwise not have been obtained save by a very skillful artist at a great expense.

It is hardly necessary to say that those who can use colors, have a store of gifts photographic at their command, but perhaps some have not thought of the photographic miniature as one of those things that the skillful hands can accomplish. An intimate little home portrait on porcelain (otherwise an opal plate) colored daintily by hand and carefully framed in gold or mahogany, is a gift worth while—only those of artistic skill with brush and paint should attempt it.

There is, however, a miniature which may be made with photography alone which is unique and a very pretty gift. It is an imitation Daguerreotype. Original Daguerreotypes are hard to make, and rarely well done. But the imitation is almost as pretty, and not expensive or difficult. Procure a piece of burnished copper the size of a lantern slide plate. Have it silver plated, which can be done at the expense of a few cents at any plating store. Then make a positive on a lantern slide of the head you desire to have in the imitation Daguerreotype. Make a thick solution of clear gelatine and flow it on the silver coated plate. Clap the lantern slide plate with the image on it, film side down, to the gelatine covered silver plate and lay flat on a warm surface to dry. When finished, the whole will have much the appearance of a Daguerreotype, since the silver, showing through the thin lantern slide image, will give a metallic tone to the high-lights, which is the distinguishing feature of the Daguerreotype itself.

One hardly likes to omit in any story of photographic gifts such processes as watch-case photography and transferring photographs to plates or plaques of china or porcelain. Yet as these processes are rather technical and difficult for the amateur, no consideration will be given them here. But there is nothing difficult about blue-print—indeed, it is the very simplest of photographic print-

ing processes. Yet it may be used for a dainty gift with excellent results. If you have a friend of the skirt-wearing branch of humanity, who takes pride in a "blue and white room," consider her pleasure in a complete set of pictures in blue and white to form a frieze or border for that room. Such pictures should hardly be less than eight by ten in size. If your negatives are smaller, it means, of course, the making of a complete set of new negatives by the enlargement process. And this is neither a small nor an inexpensive task. If a room be twelve by sixteen feet, the total distance around is fifty-six feet which means sixty-seven negatives. If, however, the negatives be made on bromide paper, and afterward oiled with vaseline and well dried, they will, provided they are very strong and contrasty prints, make excellent negatives to print from on blue-print paper. To make enlarged paper negatives means positives from which to print, and these are easiest made by contact on slow plates, exactly as if making bromide paper contact prints.

And now, perhaps you are wondering why I would present a subject of this kind at a time when the photographer's year is just beginning, and when he is far more eager to take camera and go out in the country than to fuss about the laboratory with strange means of using photography to make gifts. But the reason is plain to see. At this time, when all outdoors is calling, the photographic bug is clamoring for expression. He doesn't care much what you take as long as you take *something*. But why not make some, at least, of the ex-



"THE MORNING TRAIN." DR. F. F. SORNBERGER, CORTLAND, N. Y.



"MY LITTLE GREY HOME IN THE WEST." SECOND PRIZE, THE CAMERA
BEGINNERS' COMPETITION No. 4. JAMES V. DUNHAM, WINNIPEG, MAN.



"FEBRUARY." FIRST PRIZE, THE CAMERA COMPETITION No. 202
CHARLES P. AES, HOBOKEN, N. J.

posures, upon subjects which, later, will give a new and added pleasure in their ability to turn themselves, aided by your skillful fingers, into gifts? The set of prints of sister's friends, for the place cards, the old homestead of some friend for his book-mark, a set of loved landscapes for a wall frieze, six pictures from his boyhood haunts for a lamp shade for some man friend. If these pictures be not taken now when the conditions are favorable, winter with its long evenings, holidays with their suggestions of gift-giving, or birthdays, with their need for a present, will overtake you before you know it. The time to prepare for the use of the camera as a means of gift-making which is not to be bought with money is now—now, when outdoors is at its prettiest. And with the negatives made and stored, the actual making of the gift itself can well be left to greater leisure and less attractive days.

THE WAY OF THE INTELLIGENT AMATEUR

E. B. STEPHENSON

WHAT shall it profit a man if he have the best camera in the world but cannot make good pictures? What shall it profit him to try each new brand of plates or style of printing paper if he cannot use the ones he has? For a good many years my friends and I have been taking pictures covering the whole range of subjects from landscapes to photomicrographs, with outfits that cost from two to two hundred dollars, (I may state, however, that the latter always belonged to the friends) and with almost every brand of material on the market. When we worked long enough on some particular thing, we often got good results, but we were never sure of duplicating those results a year later. What is the reason for the rather consistent failure of the average amateur to make good pictures? It isn't the lack of apparatus or of photographic material, for these have reached a marvelous perfection, so the fault must be with the operator and his methods.

Now I have no intention of becoming a professional photographer, because my life work happens to lead in a different direction, but I am interested in photography and I do aspire to the class of "intelligent amateur." I am pretty well convinced that if one is to be an intelligent amateur, he must do much thinking and studying and little blind practicing. In other words it takes brains and skill to consistently make good pictures. One of my chief difficulties has always been in determining just what was wrong with my pictures, because so many things usually changed from one to the next. Finally I chose to work up a subject that permitted many of these variables to be fixed so that I could learn one thing at a time. That subject was copying. The fact that a member of the State Historical Society frequently has a wonderful collection of pictures that he wants me to copy, may have influenced me; at any rate he has helped pay for much of my accumulated experience.

So in a really logical, even if in an apparently somewhat feminine way,

let us skip the preliminaries and state first a few conclusions as to general principles upon which my method of attacking the problems of copying was based.

First: Given a perfectly exposed negative, the rest of the process may be made largely mechanical, while with an improperly exposed negative, the widest technical knowledge or skill in manipulation will not produce the best possible picture.

Second: The way to get a proper exposure is to keep constant as many as possible of the variable factors, and then to determine the laws of variation of all the factors so that they can be calculated with mathematical exactness for each case.

Third: A detailed written record of each negative should be kept for future reference so that one may truly profit by previous experience.

These principles, I believe, are really general and fundamental and apply to any sort of work. The detailed application to the problem of copying will serve as an illustration of the method which may be applied to any similar case.

In the light of our second principle, what are the factors we have to consider and what are their laws of variation under the conditions which we are working. For clearness let us tabulate them as follows:

1. Original: a—surface, b—color, c—condition.
2. Copy: a—for record, b—for reproduction, c—for lantern slides.
3. Magnification: a—size of original, b—size of copy, c—focal length of lens.
4. Light: a—intensity, b—constancy, c—direction.
5. Lens: a—type, b—speed, c—corrections.
6. Diaphragm or stop: a—marked value, b—relative value.
7. Plate: a—brand, b—speed, c—color value.
8. Color: a—exposure factor, b—ray filter.
9. Exposure.
10. Development: a—developer, b—time, c—temperature.
11. Fixing, washing and drying.
12. Printing Paper: a—emulsion, b—surface, c—exposure.
13. Lantern slides.

How many of these factors can be definitely fixed, so that when once determined they need no further consideration? Obviously 1, 2 and 3 will vary with the particular picture and the purpose for which the copy is to be used. We will discuss these later. Factors 4, 5, 6 and 7 however, may be fixed and determined once for all.

To have a constant source of light available at all times, of sufficient intensity, and from the right direction, it is essential that artificial light be used, because daylight varies so greatly with the seasons and the weather, that even when an exposure meter is used the results are variable and the work tedious and one cannot work at night. The mercury arc is probably the best artificial light, the carbon arc is in common use by professionals, but for



"EXPLORING MT. RAINIER." SECOND PRIZE, THE CAMERA COMPETITION NO. 202
ELLA R. CHASE, SEATTLE, WASH.



"PORTRAIT STUDY." THIRD PRIZE, THE CAMERA COMPETITION No. 202
MRS. WILMA B. McDEVITT, WASHINGTON, D. C.

the amateur, tungstens or the nitrogen filled tungstens are very convenient and satisfactory.

The lens may be as good as one can afford, though an expensive lens is by no means necessary unless one is going in for three color work. It is necessary that the lens be rectilinear and have a flat field, but as speed is of no particular importance, it may be stopped down for definition and covering power. Too small a stop, however, is neither necessary nor advisable, as there is no depth to the original, and it seems to show too much grain of the paper. With an ordinary rapid rectilinear lens the writer generally uses $f/16$. A point of considerable importance in the value of the stop should be noted. The f value of a lens is defined as the ratio of the effective aperture to the focal length. In general work the distance from lens to plate does not differ much from the focal length, but in copying this is no longer true, as the working focus is greatly increased. Corrections for this are given in a table in the instruction book for the Watkin's exposure meter, and are allowed for in the formula below.

There are many reliable brands of plates on the market and doubtless good work can be done with any of them, but each one has its peculiarities, and the writer thoroughly believes in the system of selecting one brand that suits his personal preference, becoming thoroughly familiar with it, and then using it exclusively. The relative speeds and color values as given by the manufacturer are usually fairly accurate, though the fast plates are liable to be slower or the slow ones faster than they are rated. If one considers his time of any value, it is poor economy to use cheap plates, because, for example, the time spent in blocking out a few pin holes quickly overbalances a few cents difference in original cost of plates.

In case the pictures are colored, or have defects that it is desired to obliterate, various types of ray filters and plates are a necessity. This whole subject is admirably presented in a booklet issued by the Cramer Dry Plate Co., called "The Photographing of Color Contrasts" and I may quote here only the general principles on which color photography depends. "To photograph any color with increased relative contrast, *i. e.*, to make it darker, it is necessary to make use of a plate and filter that will, in combination, utilize only the light *absorbed* by the colored object itself. If, on the contrary, we desire to weaken or obliterate any particular color, then it is necessary that we make use of a plate and filter that will, in combination, act only with the light of the same color as the object *reflects*."

How are all these variable factors combined to determine the exposure? The size of the original and the purpose of the copy determine the magnification or reduction, *i. e.*, the ratio of the linear size of the image to the linear size of the object, but since the light must cover an area, the exposure is directly proportional to the square of the magnification. The f value also changes with the magnification as noted above and the exposure is directly proportional to the square of the f value, or to the first power of the U. S. stop value. The intensity of the light will be directly proportional to the

number of lamps used at a fixed distance, and the exposure inversely proportional to the intensity. Any given f value admits the same quantity of light for all lenses at the same magnification, so the particular type of lens does not affect the exposure, except that the better the lens the greater the speed at which it can be used satisfactorily. Plate speeds may be used on the Watkin's system or any relative system determined experimentally, the time of exposure being inversely proportional to the speed of the plate. In case the original is colored, or we need to use a color screen, this will increase the exposure by a constant multiplying factor which must be determined experimentally. All these factors may be combined into one formula for the relative times of exposure of two plates, where the subscripts 1 refer to the first plate, the subscripts 2 to the second, M is the magnification, f the f -value of the stop, S the plate speed, L the number of lights, and C the color factor; then,

$$\frac{T_1}{T_2} = \left(\frac{M_1 + 1}{M_2 + 1} \right)^2 \times \left(\frac{f_1}{f_2} \right)^2 \times \frac{L_2}{L_1} \times \frac{S_2}{S_1} \times \frac{C_1}{C_2}^*$$

Now let us take a concrete case, carefully determine the correct exposure by trial and then calculate the exposure for another subject. Take an ordinary black and white picture of a landscape, 5 x 7, from which we wish to make a negative for a 5 x 7 print. This is a magnification of 1. Using the lighting arrangement shown in the figure, but with only four lights on each side, a rapid rectilinear lens of 8 inch focus, set on U. S. stop 16, or f 16, a Cramer "Commercial" plate with a Watkin's speed of 60, and no ray filter. All the conditions are temporarily fixed and the trial should be repeated until an entirely satisfactory negative, as determined by the finished print, is obtained. Since this result is to be our standard for all future work, it is essential that it be carefully and accurately obtained, and we must not be satisfied with a passable negative. Let this correct exposure be 20 seconds. On account of the latitude of the plates, any exposure from 15 to 25 seconds would probably give correct gradation and only a variation in density, but it simplifies printing if all negatives are also of the same density.

Let our next picture be colored, size 8 x 10, from which we wish to make a 4 x 5 print. This is a magnification of $\frac{1}{2}$. Using 6 lights this time, the same lens but set on U. S. stop 32, a Cramer "Iso Slow" plate of speed 90, and a yellow filter of factor 5, what is the correct exposure? Substituting the values for plates 1 and 2 in the formula given above we have

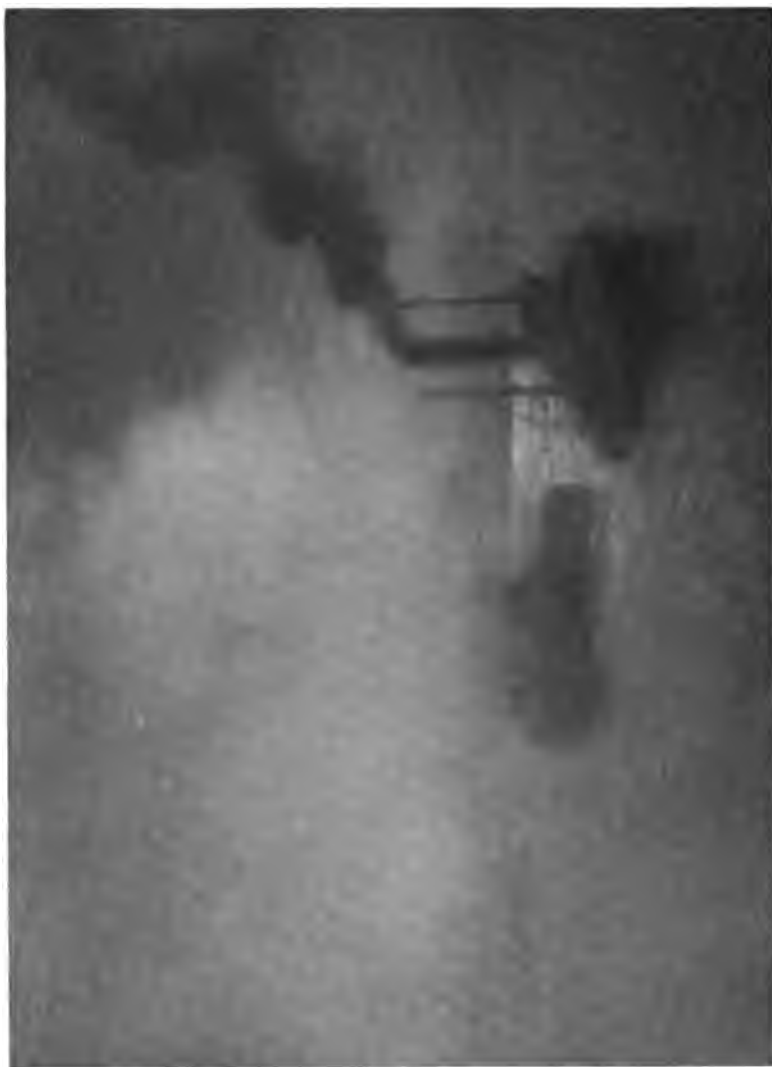
$$\frac{20}{T_2} = \left(\frac{1 + 1}{\frac{1}{2} + 1} \right)^2 \times \frac{16}{32} \times \frac{6}{4} \times \frac{90}{60} \times \frac{1}{5}$$

and find that $T_2 = 50$ seconds. This formula is really not as difficult to apply as it appears, because most of the work falls into certain groups where everything is constant but the magnification, and it may be calculated once for all for each group and the result posted for convenient reference.

* FOOTNOTE.—The derivation of the first part of this equation can be found in "Thick Lens Optics," by Baker. D. Van Nostrand Co., publishers, New York.



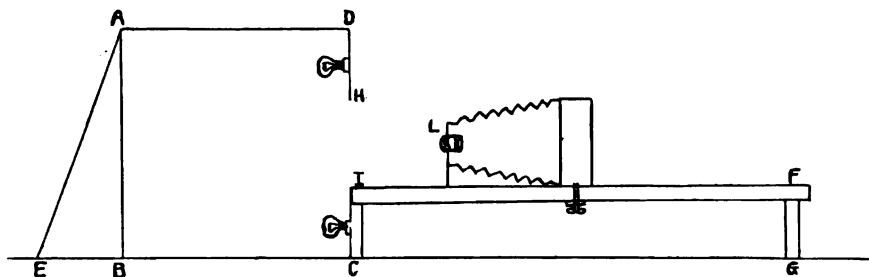
"LUCERNE." FIRST PRIZE, AMATEUR CLASS, PHOTOGRAPHIC DEALERS' CONVENTION
W. T. HIGBEE, CLEVELAND, OHIO



"THE ABATING STORM." SECOND PRIZE, AMATEUR CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION. LYSANDER E. WRIGHT, EAST ORANGE, N. J.

As a result of his experience the writer has designed a simple apparatus for this work, a diagrammatic sketch of which is given in the figure.

A, B, C, D is a cubical box 2 feet each way, with opening H I large enough to permit a full-sized picture being taken, but so small that no direct light from the lamps can strike the ground-glass. The exact dimensions of this opening will depend on the focal length of the copying lens. Six of the new concentrated filament 40-watt tungstens are placed in vertical rows on each side of the box, and the whole inside is painted white with a dull finish. The purpose of this arrangement is to get a diffused, flat lighting with no glare. The enclosed box is not absolutely necessary, but the many reflections from the dull surface diffuse the light as well as utilize all of it. The picture to be copied is attached to the board A B by thumb tacks or finger clamps. The right hand side of the box is hinged to permit easy adjustment of the copy, and the board A B has an extra brace A E for rigidity. I F is a heavy board along which the camera slides, raised by the blocks I C and F G so that the optical axis of the camera is perpendicular to the center of the board A B.



It is obvious that by providing a light tight connection between H, I and L, or by having an enclosed source of light, the apparatus may be used for enlarging or lantern slide making. The negative to be enlarged is placed in an old plate holder with the partition removed, and the plate illuminated as strongly as possible through the ground-glass. The enlarging paper or the lantern slide is placed on A B. The apparatus is shown in very simple form, but it is correct in principle and such additions for accuracy and convenience of working may be made as one's ingenuity suggests or his pocketbook will permit.

Assuming that we have a correctly exposed negative, a definite routine for the rest of the process should be worked out, and the more mechanical it is the better and more uniform will be the finished product. In other words, the thought and skill are put into the original exposure and not in trying to reduce, intensify, correct for over- or under-exposure, or otherwise to "doctor" an imperfect negative. A developer recommended by the manufacturer is used, the time-temperature method is strictly followed, and the plates are fixed, washed and dried with as little handling as possible. Since the plates are of uniform density, printing is simplified and there is no waste of time or

material due to bad guesses on exposure. Of course, the purity of the chemicals and the greatest cleanliness of apparatus and dark-room are fundamentals that cannot be over emphasized. When speed is necessary and it is not essential to preserve the negatives indefinitely, a rapid hypo composed of 1000 parts of water, 200 parts hypo, and 62 parts ammonium chloride, or sal ammoniac, is used. This will fix an ordinary plate in three minutes and is so soluble that it can be washed out in five minutes. Fifteen minutes is sufficient for drying with an electric fan. Plates so treated have kept for over a year without deterioration, but I cannot guarantee their ultimate permanence. If that is essential they may be washed more later and hardened in a 10 per cent formalin bath.

The next problem which I attacked was making lantern slides and although they have difficulties of their own, they must ultimately yield to the scientific method of treatment and my detailed record of experiments in copying—but that is another story. My present hope is that by taking up one line of work at a time and thoroughly mastering its principles, I may ultimately attain to my photographic ideal—Class A, Intelligent Amateur.

PICTURES THAT PAY—BELMONT ODELL

WHEN a publisher sends you a crisp check for some of your prints, you will feel a new photographic thrill. Thousands of photographs are reproduced every month. Someone supplies this demand, someone is being paid handsomely for doing it. Publishers are ever on a still-hunt for photographs suitable for reproduction, and a batch of prints, cleverly conceived and finely executed, always gladdens the editorial heart, no matter from what source it comes. The great illustrated news weeklies like *Collier's* and *Leslie's* have their own corps of photographers, yet the field is open to others.

Any useful or practical idea that can be vividly represented by a picture is salable. If you can entertain or interest a few thousand people for thirty seconds, they wait for your message. The world wants to laugh and cry and be surprised. Art consists in ministering to these varied wants of mankind.

The merely pretty picture, the kind easily duplicated in any community, stands a poor show nowadays, while those which depict the flow of red blood find a waiting market. Magazines devoted to outdoor sports want pictures of hunting, fishing, canoeing and camping scenes. They use out-of-the-ordinary vacation pictures. *Recreation*, *Outdoor Life*, *Field and Stream* and the *Outer's Book* are leaders in this class. The illustrated weekly newspapers that issue special Saturday or Sunday editions use pictures of everything of general public interest; portraits of persons one hundred years old, great fires, floods, wrecks and disasters, remarkable scenes, devices, heirlooms, freaks of nature and the odd and curious things of life. If Nature performs one of her queer stunts in your vicinity, such as growing potatoes weighing three pounds, make a picture of it and send it to *The Pennsylvania Grit*, Williamsport, Pa., with a



**"SUNLIGHT," SECOND PRIZE, PROFESSIONAL CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION. H. KREBS, WASHINGTON, D. C.**



"THE 'CELLIST.'" HONORABLE MENTION, PROFESSIONAL CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION. G. C. KEHRES, CLEVELAND, OHIO

brief description telling where and by whom it was grown, and the variety of tuber. Make your picture effective and let the abnormal spud tell its own story. You might do this by balancing it in a scale set at three pounds, or by including in the picture some familiar object like a spool or teaspoon to establish a scale for comparison of sizes. If a windstorm lifts the roof off a building and sets it carefully over the fence, a picture of the wreckage will bring you a check. Newspapers demand news value and human interest, and the more they grip human hearts the greater will be your recompense. News value means an object or event of general public interest, and if it only interests those in the community in which it happened, then it has no general appeal. By human interest, is meant the close connection the object or event has with living people. Pictures which do not dove-tail into everyday life do not typify human interest; for example, a skiff dashing against the shoals is inane and uninteresting; place a person in the skiff and you have added human interest.

Agricultural papers, of which there are many excellent ones, want photographs of prize stock, poultry, farm machinery in operation showing new methods of doing farm work. *Farm Journal*, *Rural New Yorker*, *Country Gentleman* and scores of others want pictures with a strong rural flavor. Timeliness is important. If your photographs illustrate the correct method of sweet pea culture, get them to the publisher two or three months before planting time. In December or January, your set might be accepted for publication in the March number. Likewise, if your set shows the proper method of gathering and storing bulbs, submit it in July for consideration in autumn issues. If you happen to be an authority on gardening, make a series pertaining to some phase of the work, for instance, you might undertake to show the correct method of rose culture, how to set out, trim, mulch and stake a rose bush for best results; then write a short article "around" the pictures. If you have no taste for writing, hunt up someone who has, and propose a joint authorship article with an equal division of the proceeds therefrom. If there are no hack writers among your acquaintances, get in touch with one who is doing that class of work for the magazines. You can reach any living writer by addressing him in care of the publication to which he contributes.

Is there a factory in your town? There is a trade paper published somewhere, devoted to the industry it represents. It wants photographs of how this particular factory solves problems peculiar to the manufacture of their products. Anyone in your town discovered a novel use for concrete? *Cement*, New York City wants to know about it. Anything special in architecture which happens in your locality would make a picture salable to either the *American Architect*, Chicago, or the *Architectural Record*, New York. *Popular Mechanics* pays immediately upon acceptance for pictures of anything covered by its name. *World's Advance* will reward you liberally for photographs showing new or novel applications of electricity. *Technical World* invites pictures of small mechanical stunts which will appeal to mechanics and shop men. *Garden and Home*, *Suburban Life* and *Country Life in America* use high-class photographs of model gardens and arrangements of home grounds. Give your

picture a predominating note, and make it smack of the poetry of suburban life. Many magazines of the better kind use photographic cover designs, and pay reckless prices for striking ideas embodied in a picture. Manufacturers frequently pay unbelievable prices for pictures which emphasize the merits of their goods.

Descriptive matter written "around" a photograph enhances its value. Write your story on paper, paste it on the back at the top of the print, then fold it down over the front. And be brief—condense—give the facts, all of them—and jump right into them in the opening sentence.

Study the individual needs of the various publications, and make an honest effort to supply those needs. Try to carry the spirit of the magazine into your picture. Examine the late issues to catch the atmosphere. Publications change their editorial policies to meet new conditions, and prints which would have been acceptable a few years ago might now be out-of-date. That's why you should study late copies.



"ON THE RANCOCAS." H. T. MIDDLETON, HAINESPORT, N. J.



"PATIENT JIM." HONORABLE MENTION, AMATEUR CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION. THOMAS C. MARTINDALE, PHILADELPHIA



"STUDY," HONORABLE MENTION, PROFESSIONAL CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION. FRANK MOORE, CLEVELAND, OHIO

If your inclinations lead you to botany or entomology, hunt up species indigenous to your locality and photograph them—and do it a little better than anyone else has ever done it before. If you are skillful enough to make pictures superior to the ones used in nursery and seed catalogs, do it, and the nursery or seed growers will pay you well.

Glossy black-and-white prints with plenty of snap and contrast are the best for the half-tone process. Write your name and address on the back of every print you send out. Do this even if you send several in the same package to the same publisher, and use a soft lead, or the impression may carry through to the front and impair the picture. If you want unavailable prints returned, write above your name, "Please return to," enclosing return postage. *When you have sent a batch of prints to a publisher, do not send duplicates to another unless the first has found them unavailable.* It is not wicked, but it is unethical and might lower your horizon by two editors. Send your prints unmounted—many prefer them also untrimmed. Mark the package "Photos Only," and affix postage at the rate of one cent for each two ounces. If they come back don't scold your wife, and if you happen to get a check in next week's mail do not elevate your head when you pass your plodding brother amateur on the street.



"A STREET IN OLD GEORGETOWN, BERMUDA."

SECOND HONORABLE MENTION, THE CAMERA COMPETITION No. 202
WILLIARD VAN DER VEER, NEW ROCHELLE, N. Y.

THE BROMOIL PROCESS—DR. EMIL MAYER

THE bromoil process has become extraordinarily popular in the last few years, and is now beginning to take the first place among artistic photographic printing methods. The technical suggestions which I published in 1912 were generally accepted and employed with success. Recently, suggestions have been made on the one hand, for simplifying the technical preparation of the print, and, on the other, for modifying the method of applying the ink or color.

It rarely happens that a process comes into existence entirely perfect, and there is no doubt that every improvement in an existing process should be welcomed with joy and thankfulness; of course, on the condition that such modification be a real improvement, which will either simplify or shorten the operations without in any way injuring the method or robbing it of its advantages.

I will, in this article, endeavor to show whether the numerous changes recommended for the bromoil process are really improvements in this sense. In order to be able to do this, the character of bromoil-printing and its range of application must first be defined. If anyone has made a negative which



"THE SHAVING OF SHAGPAT." FIRST PRIZE IN THE WANAMAKER CONTEST
CHARLES B. KEELER, CEDAR RAPIDS, IOWA



"INTERESTED." HONORABLE MENTION, PROFESSIONAL CLASS, PHOTOGRAPHIC
DEALERS' CONVENTION, CLARENCE STEARNS, ROCHESTER, MINN.



"AN ITALIAN WOODLAND." HONORABLE MENTION, AMATEUR CLASS, PHOTOGRAPHIC DEALERS' CONVENTION. W. H. PORTERFIELD, BUFFALO, N. Y.

is in every respect satisfactory and, therefore, contains everything that its maker desires in the way of line-direction and tone-values, then he will only have to select among the many highly-developed printing-processes the one which offers him the best photographic technique. Any one of these processes will, with proper handling, give him a truthful reproduction of his ideal negative. In such a case, however, the bromoil process has not the slightest application, because its principal advantages cannot be utilized. Of course, one must here count upon that photographic maturity that strives for the best possible result and not merely selects a process in order to give the picture a certain *cachet* due to its name.

The ideal negative that leaves nothing to be desired is, meanwhile, extremely rare, and the number sinks in proportion to the growth of the artistic comprehension. The finer, more sure and more mature the taste of the photographer becomes, the stronger will be the desire within him to be able to treat his negatives freely. He would like to reproduce in the picture the passing mood of the moment, to determine freely its tone-value; in a word, he would place more dependence on the leading lines of his negative, but in all else he would exercise artistic freedom. Such desires are extremely



"THE LAUNCHING." SECOND PRIZE IN THE WANAMAKER CONTEST
CHARLES O. HAIMOVITZ, PHILADELPHIA

difficult to realize by treating the negative alone. If he wishes to alter the negative by blocking-out, by retouching and such procedures, their effect cannot be determined with certainty; in any case they are tedious and generally inalterable. From this fact, arises the postulate, that the artistic efforts of the photographer should be realized only in the positive. The bromoil process and the oil process that preceded it are the first and only technical methods which enable him to realize fully this postulate.

The bromoil process, then, offers an artistic freedom in the preparation of the positive whose possibilities cannot be over-estimated. When it has been mastered, with a single negative the greatest variety of pictorial effect can be produced, with scarcely anything in common but the leading lines. Since one is able to work up each part of a picture according to one's taste or will, be it strong or delicate, he has complete control over the tone-values; he can emphasize what is important, suppress or omit undesired details; by



"BACIO DELLA LUNA." THIRD PRIZE IN THE WANAMAKER CONTEST
WILLIAMINA PARRISH, ST. LOUIS, MO.



"THE SMILE OF YOUTH." FIRST HONORABLE MENTION, THE CAMERA
COMPETITION No. 202. H. B. RUDOLPH, SPRINGFIELD, OHIO



"THE DANCER." LOUIS A. GOETZ, SAN FRANCISCO, CALIF.

manipulation of the tones, he can advance or throw back the background, make the shadows strong or misty. This free control of the tone-values can be limited, if desired, to a particular object, or it may be expanded over the whole picture. Even the structure of the color-coating can be controlled, according to the taste of the photographer, in gradation from the coarsest brush-work to the finest, and all in the most varied color-tones. And so it comes about that in artistic and technically skillful hands the bromoil process is capable of giving results that have been hitherto unknown in photography, and which may be compared in effect with fine examples of the graphic art.

To be sure, the production of such high-grade work depends—not to speak of artistic taste and technique—upon a strict observance of certain technical conditions. First among these is the production of an absolutely correct bromide print with very clear lights and well-modulated shadows. If the bromide print is to be fully successful, the negative should give the technically best silver print that can be obtained from it; and this without reference to the effect to be produced in the bromoil print. To the neglect of this preliminary requirement or the lack of the skill required to make a good bromide print, may perhaps be ascribed most of the failures in bromoil printing.

Whether a bromide print offers a really faultless foundation for the bromoil, can generally—especially by the beginner and in many cases even by a practised hand—be judged with certainty only after the print is fixed and is examined by white light. For instance, a slight deposit of silver in the high-lights may be easily overlooked in the red or yellow light of the dark-room; and yet the presence of such trifling deposit is capable of rendering very difficult or even impossible the obtaining of the desired result. The extreme importance of the painfully exact handling of bromide prints intended for bromoil printing can be judged best by those who have had copious experience in the work. Of course, a bromoil can be made with an approximately correct print as foundation; but one will not have anything like the leeway and chances of success that one would have with an absolutely correct print. The beauty of perfectly-made bromoil prints is really not yet known in many circles, because the ordinary methods of reproduction used in the periodicals cannot do them justice. So from the lack of a proper criterion with which to compare their work, many operators think their own pictures are perfect, and are disposed to look upon the exactness here recommended as superfluous pedantry.

When I began my investigation of the bromoil process, in 1911, I was acquainted with the recommendation made by Mr. J. M. Sellow to bleach and fix the bromide print immediately after development. I gave, at that time, particular attention to this shortened method, as it was alluring to be able to cut out a few phases in the preparation of the print and so simplify it. I soon had to recognize, however, that this shortening cut at the foundation of the process, often rendered the result doubtful. As already stated, the bromide print cannot be kept too fine and clear; but when it is bleached in

the dark-room immediately after developing, it is impossible to judge whether it will be absolutely free of defect. Besides, in using this abbreviated method other objectionable features are likely to creep in, which show themselves only when the color is applied; and as they do not appear when the normal procedure is followed, it is almost certain that they are due to chemical changes induced by the shorter method.

For similar reasons, I advised the use of amidol exclusively for developing, and neutral fixing-baths, as by using other developers and acid fixing-baths there is a likelihood of imperfections. It would certainly have been more agreeable to me if I could have recommended any convenient developer and the ordinary fixer for the bromide print, since that would have simplified the preliminary operations considerably. But I had to disapprove their employment, because I generally, though not always, had unsatisfactory results when using other developers and fixing-baths; and naturally it was my desire to eliminate, so far as possible, every source of failure. I therefore summarize what I have already said in the statement that, with the abbreviated method and with other developers and fixing-baths, good results in bromoil are certainly not impossible; but if one wishes to work with certainty and to obtain the most satisfactory prints with a *personal* note, one will do well to stick to the regular procedure, which, taken all in all, is not appreciably longer than the other method. It should, moreover, be kept in mind that in using any photographic process it is much less a question of speed than of perfection in the result.

Given, then, a correctly prepared and bleached bromide print, if it is colored in a mechanical and rule-of-thumb manner, it will still fall short of any noteworthy result. The infinite possibilities which this process offers us—in that it enables us to control freely all tone-values—depend upon a circumstance that requires further explanation: *We must also be able to control, at will, the degree of swelling of the gelatine coating.* If, after correct preparation, the emulsion is swelled in cold water, it will, on applying the color, give a tone-gradation that will be inferior to the original print—a peculiarity that makes possible a whole series of beautiful effects; if the picture is fully worked out, the tone-values are diminished and run into one another. If, however, the swelling property of the gelatine is utilized by the use of successively warmer waterbaths, the gradation becomes richer and richer, until in the final tone-scale it far exceeds that of the original. If it is further borne in mind that each degree of swelling has its peculiar characteristics and that these are the only basis of obtainable effects, one will be able to judge how important it is to be able to exercise full and free influence over the swelling of the gelatine coating of the prepared print. And here the important fact should be mentioned, that the degree of swelling can be controlled even while applying the color, the simple dipping of the print in warm water enabling the operator to change the effect as the work proceeds. It must, therefore, be unconditionally required that the prepared print, when swelled in cold water, show to the eye little or no noticeable relief, otherwise the greater part of the obtainable effects are precluded.

Bromoil is the first, and so far the only, process in which the gradation of a picture can be changed at will; and it is just this formerly unknown possibility that has led to results that could not be obtained heretofore by photographic means. And all this calls for but a single tool—the brush. With brushes of various sizes, all effects in applying the ink are easily and surely obtainable. With them alone, the tone can be controlled even to the smallest detail and the many-formed, always changing contours readily followed. The fact that the picture takes form slowly under the brush is in itself a not unimportant advantage. The picture thus slowly built up presents a constantly changing aspect that excites mightily the artistic fancy of the worker, and he will often feel impelled to try to obtain certain effects by restraining some portions and giving to others a stronger tone.—*Photographische Rundschau* (Translated by James Cooper).

PAPERS FOR THE BEGINNER— THE LENS CONTINUED

THE easiest way to get a clear conception of how the lens acts in making a picture and the manner in which it disposes of the rays of light is to consider it as made up of just such prisms of glass as we spoke of in a former paper, only we shall have to presume that these prisms are infinitely small and of infinite number.

First, let us start with two prisms, placed base to base, as in Fig. 4. If the light starts from a point in a line with their bases, it will be refracted downward by the upper prism and upward by the lower prism, so that the paths of the refracted rays will cross.

Take the pair of rays Pa and Pb: Pa will strike the prism A and is refracted to a' and then p'. Pb will follow a similar path through prism B, and Pbb', reaching also the point p'. So now you see that a series of little similar prisms, Fig. 2, could be so placed that any number of rays proceeding from P could be made to come together at p'. Now, since it is the angle at which the sides of the prism are set, not the mere thickness of the glass which causes the refraction of the ray, we may fill up the blank space through which the central ray goes, unrefracted, just as it would through open space (Fig. 6) and round off the whole with glass till we get the well-known form of an ordinary double convex lens, C, which is like an ordinary reading glass or pocket magnifier.

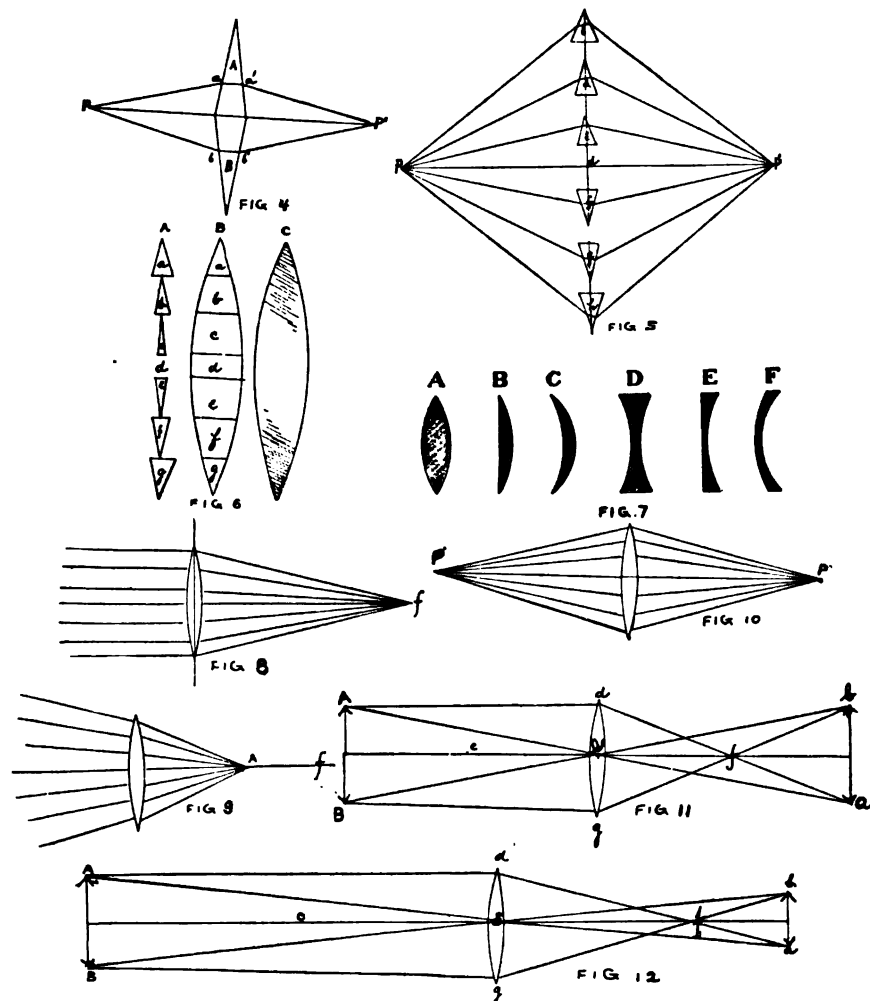
Lenses may be divided into two classes, those thickest at the center and those thinnest at the center (see Fig. 7). Where the center of the lens is the thickest glass (A B C) we call a positive lens, where the center is thinnest, (D E F) we call the lens a negative lens. When both the surfaces are convex, we call it a double convex lens (A). With one convex and one flat plane surface, we call it a plano convex lens (B). Where there is a convex and a concave surface, it is a meniscus (C).

All the three lenses (A B C) cause rays falling on them to converge or come to a common point, (the glass being thickest at the center). Where

the center of the lens is the thinnest glass, (D E F) the rays bend outward, or diverge; D is a double concave, E a plano concave, F a concave meniscus.

With any convex lens, parallel rays incident are made to converge so as to meet in a common point, called the principal focus. The line running through the centre of the lens is called its axis. If the source of light be removed out of the principal focus to a point nearer the lens, the rays after passing through the lens will diverge more than they did before—Fig. 9. If the light is moved further back than the principal focus, the rays after passing through the lens will converge, and the point p' , at which they meet will approach nearer and nearer the principal focus, which point they will reach when the source of light is so far removed that the rays coming from it are practically parallel.

Every point, therefore, along the axis of a lens has another corresponding point on the other side of the lens to which all the rays, starting from the first





"AGAINST THE SKY." HONORABLE MENTION, AMATEUR CLASS, PHOTOGRAPHIC DEALERS' CONVENTION. E. R. STANCLIFF, LOS ANGELES, CALIF.



"JOY." ALBERT B. STREET, HANOVER, N. H.

point will converge and from which all rays must come which are converged at the first point.

Such pairs of points are called the conjugate foci, (Fig. 10).

Bearing in mind these facts about the lens, we may now see how images or pictures of things are formed by its means, and how the relative sizes of the object and its images depend upon their relative distances from the lens.

As the rays from every point of the object are brought to a focus at a corresponding point on the other side of the lens an image is there formed, which may be received upon a screen or ground-glass of the camera.

This image may be of the same size as the object itself, or greater or smaller. It will be of the same size if it is placed at a distance equal to twice the focal length of the lens. In Fig. 11, c and f are the conjugate foci; $A B$, the object; $a b$, the image; the ray $A d$ will be refracted to a , to which point also the ray $A e$ will come after passing through the center of the lens and suffering no refraction.

Similarly all the other rays from A which fall on the lens will be brought to the point a . In like manner rays from B will be focused at b , and rays from all points in between A and B at corresponding positions between a and b , so that we get an inverted image of the object of the same size and at the same distance from the lens on the other side. If the object is removed further away from the lens, as in Fig. 12, we get a smaller image.

Bring the object closer and we get an image larger on the ground-glass screen and further away from the lens. This is the reason why in the camera the picture of a distant object is formed on the ground-glass pushed up close to the lens.

You will notice when focusing for far distances you push in your ground-glass toward the lens, and in focusing for near objects you draw the bellows with the ground-glass back from the lens. We have a good deal more to say by way of introduction to the photographic lens before we can hope to give you a tolerably clear understanding of its working properties, but we shall have to reserve our further explanation until the next chapter.

REFLECTORS AND RETOUCHING

IT goes without saying that bad illumination, or in other words, unsuitable lighting of the head has the major share in the dissatisfaction with the portrait.

Suitableness of illumination to the character of the face is the *sine qua non*. The way in which we manipulate our light will make a well-known face of a friend or acquaintance a true likeness or one which is entirely unrecognizable. I had a friend who was anxious to have a picture of his wife, and he was negligent of the cost, to secure one. As he particularly emphasized "picture," I directed him to one of our renowned pictorialists. He got his picture and he paid for it, and the price was sufficiently commensurate to convince him that it must be pictorial. And, to be just, from this point of view we really would

denominate it a charming head study, but it did not please him. He was dissatisfied, because, despite its pictorial merits, he failed to see any resemblance in it to his wife, and his candid friends and myself agreed with him. He kept the picture for its art quality, but had a photograph made for his own pleasure by a photographer who presented some recognizable features of the original.

We have seen portraits lighted by the so-called or rather miscalled "Rembrandt" which were unrecognizable as facsimiles. Pictorial effect had so predominated over verisimilitude that likeness had wholly vanished. Where the portrait fails it is pretty certainly due primarily to a lighting not in accordance with the face. Retouching and artistic transformation build on it as a substratum. The lighting may bring out too strongly some characteristic not emphasized by normal light, something not essential to the expression, and ordinarily over-looked. A beautiful full face, with no angularities would be falsified by a concentrated illumination. Strong contrasts of light and shade would make it absolutely commonplace. Such a face ought to be taken in a broad light and by judicious use of reflecting screens, so that while the modeling should be felt and the head have its rotundity preserved, there should be no shadows on the flesh so dark as the eyes, and no strong shadow anywhere.

Now, our pictorialist, the moment such a full-moon beauty enters the studio imagines that her face needs artistic correction. This, somewhat, pronounced type of beauty must come under his light modification. He is going to improve by putting in a few deep shadows. It will make the picture more effective. Away goes the likeness and the truth, but he gets his picture and is satisfied.

Where a head has deep-sunken eyes and strength of markings about the sockets, there is great danger, we admit, of exaggeration by camera methods. We must manipulate to reduce, must diminish the top-light and throw reflections into the recesses and, above all, give full exposure to the plate. In faces deeply wrinkled and with lines of character, as they are called, we have no right to trust to retouching with the pencil to the degree of touching out the character. Our duty only is not to intensify them beyond nature, or, as they look to the normal eye. Here the reflecting screen is more potent if judiciously used, than the pencil of the artist. The reflector in skilled hands reduces the sharpness without obliterating the significance of these lines.

The reflector is a more useful instrument in toning down Nature's incongruities or irregularities than the brush or pencil of the artist. It gives the roundness of outdoor illumination without the flatness we usually get when we try to get such an effect indoors.

Reflectors should be of various sizes, shapes and colors, so that one may, at will, throw the light on the part desired, making the method, if judiciously and feelingly pursued, as effective as brush manipulation. It will bring out a head with fine modeling, since we may depress or accentuate wherever needed.

PROGRESS OF PHOTOGRAPHY— CARL RAU

FOR many years the place of pictorial photography in the field of art was much disputed, and quite a difference of opinion existed among artists and the public interested in art matters, whether pictorial photography should be admitted to the exclusive circle of the fine arts or placed in the category of industrial and commercial activities. But in spite of it all, its disciples forged courageously forward, using the camera for any purpose they might fancy, and accomplishing by deeds what perhaps could have been settled by mere dispute.

On one point, however, all soon agreed, namely that pictorial photography is sure to make an impression on one's pocketbook if not on one's artistic sensibilities.

Commercially, photography has rapidly conquered for itself the foremost place in the field of reproduction, and we regret to say, has pushed some branches almost entirely out of the race: for example, the beautiful branch of wood engraving, and now, since it has fairly entered the field of color, there is no predicting what the future may have in store for it.

Perhaps some twenty-five years ago a small group of earnest photographers, or really artists, making use of the camera as their means of expression, started out along pictorial lines and the movement started by these men and women has spread throughout the world until today we find the work of the pictorial photographer gladly accorded a place beside the works produced by other mediums, in the leading art galleries of our own country, as well as abroad.

This does not mean that photography can or ever will usurp the place of any of the other arts, far from it. Photography expresses itself in its own way, and is a medium of expression, different and separate from any other; but there is room for all, each covering a field which no other can cover or will be able to cover.

While popular photography at the present time lacks the charm of color in its productions on paper, a problem which is still to be solved, yet it offers a wide range for invention and for the use of the artist's powers along such lines as composition, tonal qualities, expression, character, feeling, sentiment, etc., etc.

Then there seems to exist an impression among the general public that photography is an easy medium to handle—why, you simply "press the button, etc."—but this idea is entirely erroneous and should be discouraged. It will only result in disappointment.

To produce good photographic work is a rather difficult achievement, requiring years of practice and experience and constant study, and the same knowledge of art principles required by the artist; but we would commend the study of pictorial photography to the earnest student as being worthy the effort.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY

THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.

FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, PUBLISHER

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

COMPETITION NO. 202

THE First Award is given to Charles P. Abs for his picture "February." It is its own interpreter, which is a good feature in a picture.

The treatment of the figure is the chief interest, and the photographer has given us evidence, not only for expression of sentiment, but also in the way he has placed the model to bring out his peculiar characteristics. The old man is admirably depicted, and the suggestion of slow movement up the hill is well indicated. The landscape setting is such as helps materially to carry out the motive. The glimpse of distance to the right is charming. The composition here forms a picture in itself of much merit, and the bend in the line of the road serves to carry the eye away into the view, in this way giving good perspective.

The Second Award goes to Ella R. Chase for picture, "Exploring Mt. Rainier National Park." This is another figure and landscape study of much merit. The landscape is particularly fine and well expressed by varying masses of light and shade. The treatment of the foreground with the sinuous stream winding up the mountain enhances the perspective. The main figure upon the elevation and the group below add interest to the subject by supplying the human motive. A little extension of the scene to the left, however, would have brought the principal figure further from the edge of the view much to the advantage of the picture.

Third Award is due to Mrs. Wilma B. McDevitt for her "Portrait Study." An excellent photographic portrait secured by perfectly legitimate photographic means, true to life and feelingly expressed. The general disposition of the figure is admirable. The spacing is considered with much artistic judgment so as to secure a nice balance of lines, the range of light and shade considerable, and the treatment of the drapery good. The flesh tones are excellent, and just in the right key to be in proper relation with the dominant high-lights of the picture. The background serves well to properly relieve the figure without projecting it too much.

First Honorable Mention to H. B. Rudolph for "The Smile of Youth." It is not often that a smiling portrait is made pleasing, the smile is apt to become stereotyped. The face smiles only the once at our first glance. After that we tire of it, because it becomes monotonous. But when the smile fits the subject so well as it does here, where it is perfectly natural and unassumed, it rather grows on us, and makes us smile with it. This is the main feature of

excellency in this child portrait. Technically there is room for improvement, both in the management of the drapery and also in the treatment of the background.

Second Honorable Mention to Willard van der Veer for "A Street In Old Georgetown, Bermuda." A quaint subject, well expressed. The composition is excellent and the perspective well managed, and the range of light and shade considerable. All this most pleasing vignette needs is indication of the human motive. A figure ascending the stairway would make it more pleasing, or indication of life shown somewhere.

Third Honorable Mention to T. E. Lipkau for "Reveries." Here we do have the human motive and have it well expressed. The management of the scheme of illumination is well effected, causing a soft illumination to fall on the face of the aged lady which brings out effectively and feelingly the characteristic expression and emphasizes the sentiment of the picture. The modulation of the fleshy envelope of the face is soft and pleasing.

BEGINNERS' COMPETITION, NO. 4

THE photographs of winter scenery as a rule are by no means of easy accomplishment, and in our criticism we shall bear this in mind, and where the photographer by exercise of good taste and judgment has succeeded in overcoming the imposed impediments, we feel that he is worthy of more than ordinary commendation when he presents a picture. Many a view of Nature clothed in the special endowment of Boreas looks tempting enough to one's artistic perception, but only to disappoint in the completion. So much had been expected and yet so little accomplished in the way of artistic composition, one must select a subject conformable to the dictates of photographic practice. A snow scene is photographically effective only when the contrasts of light and shade are properly balanced. Now it requires some experience to know when the right degree of contrast is present. The great danger of harshness arises from the high-lights being so intense and the shadows so deep cast that we lose all intermediate shades. This is more apt to happen when the light is intense. To our vision there is a modification, because our eyes to protect themselves from the garish illumination diminish the amount of light which enters, and of a consequence we are deceived as to the degree of the intensity of the light reflected from objects. But the lens relentlessly registers it in full force, and so our photograph does not have correspondence with what our eyes saw at the time we made the exposure. So it follows that the subjects presented in winter are not as plentiful as those secured during the rule of the other seasons. It is not, however, our purpose here to treat of the method for securing the best results in snow exposures, but merely to emphasize the fact that when pictorial effect is secured it is evidence not only of artistic taste on the part of the photographer, but also proof positive of his technical ability.

Our First Award is given to E. D. Hooey for his picture entitled, "Sunshine and Shadow." A very effective piece of work, and remarkably well

done. The textural value of the snow is adequately presented. It looks like snow, and there is a nice variety of light and shade, and a fine contrast without harshness. The composition is also pleasing, and adds interest to the view. The snow in this peculiar form is also somewhat of a novelty in the pictorial line, and the photographer deserves particular commendation for the way in which he has presented the subject.

The Second Award is given to James V. Dunham for "My Little Grey Home in the West." A charming little vignette, reminding one of Bewick's prints, abounding in incidents from real country life. This little view shows how few elements are needed by one possessed of selective ability in the picturesque to make an effective picture. There is much which is interesting in this limited space, where snow is the decorative element.

The Third Award is given to D. A. Timmons for "A Winter Woodland." The particular good feature in this picture is displayed in the soft transparent shadows of the tree trunks projected against the snow upon the ground. The contrast of the dark and light is also skillfully managed.



"REVERIES." THIRD HONORABLE MENTION, THE CAMERA COMPETITION NO. 202
T. E. LIPKAU, CHICAGO, ILL.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1238. *Charles W. Farrar*.—"Brown Study." Quite a pleasing indoor portrait and well posed figure. You did well to employ the oval mask to shut out the busy background which detracts from the good features of the portrait. We think, however, the oval should have included more of the lower part of the figure. Thus placed, you will exclude the picture on the wall and at the same time give better spacing to the figure.

1239. *Ford E. Samuel*.—"The Side Show." You do yourself injustice in considering your photograph a mere record of an interesting occasion. It shows considerable appreciation of quick discernment of that phase of action in a crowd which best interprets the motive of the subject. In other words, you have selected the "psychological moment"—when the action was completely interpretive. The picture has movement and action and is not a petrification of arrested movement, as is too often the case. The varied attitudes of the participants in the occasion and the diversity of individual expression make the subject more and more interesting as one studies it closely.

1240. *Marguerite Balthrope*.—"A Windy Day." A very good subject and well treated. The suggestion of movement in the garment of the little girl is brought out prop-

erly. There is a breeze in the picture and there is also action in the waves. The horizon line is properly taken with respect to the position of the little model, whose attitude is



No. 1242. *Data*.—5 x 7 Seneca View; Verito lens; *f* 4; February 12 M., good light; 1/2 second exposure; pyro-acetone developer; Argotone soft print.

full of expression, indicative of interest in the scene. The foreground is nicely broken up with objects quite appropriate to the subject. Altogether a very commendable piece of work.

1241. *Linda E. Cattell*.—"Bobbie." An excellent animal study, and a good picture. The canine quality is well expressed and at the same time the individuality of the dog distinctively brought out. The technical features are also good. It is unfortunate that the left side of the background is so obtrusive



No. 1239. *Data*.—6 1/4 x 8 1/4, Seneca View; Velox-tigmat lens; *f* 11.5; September 2 P. M., taken against the sun; 1-25th second exposure; pyro developer; Platona grade C print.

in its exhibition of the repeated boards. Had the space here been plain, the figure of the dog would have been in better relief. The lines interfere with the quiet condition of the background here demanded for pictorial effect.

1242. *N. H. Schammel*.—"Study." The portrait study is quite pleasing, particularly in the expression. The vignetting might have been done more carefully. It is a little too deep, and not sufficiently gradated off into the white background. So that the head seems too closely attached to the background. This is due principally to the too dark character of the ground. It should have been of a lighter tone and the vignetting mask kept in movement so as to prevent the marked line.

limbs forms a rather unpleasant repetition of lines.

1245. *J. B. Gale*.—"Dovis." The photograph is too hard and contrasty and this hardness is further intensified by the blank dark background, without a trace of light or shade in it. The pose is slouchy, one shoulder being much lower than the other, and the partial amputation of the hands at the bottom of the photograph is wholly unnecessary.

1246. *Hans Einarson*.—"Winter." A most pleasing study and a most excellent artistic composition. The management of the light and shade is effective. The dark trunks of the trees to the left are beautifully



No. 1246. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Korona Petite; R. R. lens; U. S. 16; January 3 P. M., bright light; 1 second exposure; metol-hydro developer; Cyko normal studio print.

1243. *Ralph H. Blohm*.—"An Old Willow." There is much which is pleasing in the treatment of the tree in its association with the wintry prospect. The shadows upon the ground are soft and luminous and the quality of strength and resistance in the old tree is well suggested. We would liked to have had a little glimpse of the distant landscape to give more atmosphere.

1244. *W. D. Manness*.—"The Skaters." The action is well presented and considerable suggestion of movement of the rapidity depicted. The costume of the young lady hardly lends itself to the pictorial, however well adapted for this special occasion. The picture needs a little variety in this particular so as to contrast better with the habit of the man. The conjunction of the four

contrasted with the soft high-lights and the broken up masses of the snowy ground and elevations. The texture value of the snow is properly indicated, and the whole subject is pervaded with a soft delightful atmosphere. The suggestion of winter is well carried out.

1247. *Harry A. Graham*.—"Home Portrait." You are correct in your self criticism of the dark hand. It would have been better to conceal it under the garment. The trouble is you did not manage the flashlight properly. In the first place the flash should have been screened off to lessen the intensity and to soften the effect, and secondly the flash was too low, which caused the general flatness. You should have elevated the lamp so that the light would strike at an angle of about 45° .



No. 1244. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Conley; Goerz Dagor lens; f 6.8; March 1 P. M., light clouds; 1-200th second exposure; Eastman tank developer; Cyko normal glossy print.

1248. *Dr. W. E. Ziegenfuss*.—"The River Rouge." The light and shade in the view are too uniform. That is to say the subject, as far as lighting is concerned, is too flat. The composition, too, is not well balanced. The two main masses are nearly of the same size and intensity. You should have directed the camera more up the stream and have used the rather pleasing off shore as a balancing mass for the more immediate clump of trees, and this would have given us some distance in the view which it needs. The treatment given the water is good.

1249. *G. E. Brower*.—"A Note to Home." An excellent composition well managed and with the accessories properly distributed. Nothing over-done. The pose and expression of the model are natural and appropriate to the motive of the picture. The background setting remarkably good and kept in proper sub-ordination. There is however a little too much obtrusive high-light particularly in front, just where quiet is demanded. The glare on the chairback should be subdued, also the strong illumination of the working material upon the table. A little manipulation either upon the negative



No. 1249. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Compact Graflex; Bausch & Lomb-Zeiss Tessar Ic lens; f 4.5; December 10 A. M., bright light; 1-5th second exposure; M. Q. developer; Azo glossy print.

or on the print would add to the very excellent quality of this picture.

1250. *Jas. V. Dunham*.—"Sunday Evening." The participants of your group are all too busy—too strenuously occupied in their endeavor to make the subject tell the story, and hence unnatural. The younger members of that company ought surely to have exhibited some interest in that bowl of luscious fruit. A group ought never to be so intensely engaged unless the topic particularly demands attention. Furthermore, the lines of composition have not been duly con-



No. 1251. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Kodak; R. R. lens; f 8; February 2 P. M., fair light; 4 seconds exposure; pyro (tray) developer; Haloid J print.

sidered. The parts—the figures) constituting it do not express co-ordination. There is little to suggest a Sunday evening—nothing relative to such a theme as a day of rest. The background is not well managed; the space is too confined and the figures too crowded. Read some of the papers on groups and genre photography published in THE CAMERA of last year.

1251. *Stanley Westley*.—"Waiting." A well posed figure with a good expression adequately carrying out the motive. The



No. 1253. *Data*.—5 x 7 Conley; Isostigmat lens; *f* 5.8; July 3 P. M., bright light; 1 second exposure; pyro-soda developer; Darko print.

perspective of the picture is also good and the accessories well managed. The only improvement we suggest is the position of the arms. There is evidence of constraint. The book is too large, forming a rather unpleasant white spot against the dark. The left arm is confused with the drapery and is somewhat awkwardly posed.

1252. *J. Douglass Smith*.—"Woodland Path." This is quite a pleasing artistic composition made up of very simple elements demonstrating how it is possible to select from almost any scene in nature an agreeable picture provided one has an eye for the attractive features and a sense of proportion in the distribution of the parts to give unity of expression.

1253. *C. R. MacCarrick*.—"Home Portrait." A good subject posed well as far as the upper portion is concerned. The effect would have been more pleasing if the limbs had not been crossed. They form rather unpleasant lines in the composition. The photographic quality is good and the illumination both of the face and drapery commendable. The background is a little too dark and monotonous. A lighter gradated ground would give better setting.

1254. *W. M. Tomkins*.—"Snow Scene." A characteristic piece of composition quite out of the ordinary, and also excellent in technical quality. The snow is well presented with nice pleasing shadows and soft high-

lights, and is in proper contrast and relation with the rocks in the half-frozen stream. The lines of the composition and the association of the masses of light and dark and the half-tones make a most enjoyable picture.

1255. *A. G. Sherman*.—"The Road to Town." A pleasing view and a most excellent photograph, well timed and properly developed to bring out the half-tones. The range of light and shade is considerable. The high-lights are soft, and even the deepest shadows rich and pleasing. The winding roadway is a particularly good feature.

1256. *Edwin L. Bradley*.—"Beautiful Fox." We suppose the title refers to the stream. The view is very much undertimed, and consequently but little of the detail is brought out. We lose all half-tones which are always the life of a picture. We cannot say much for the composition. It is hardly worthy that designation. The foreground is very uninteresting and monotonous. The water is poorly presented and the far shore is of equal intensity with the near shore and so there is no depth or atmosphere.



No. 1257. *Data*.—3 1/4 x 5 1/2 Conley XV; Orthographic lens; U. S. 8; April 2.30 P. M., cloudy; 1/2 second, 3 times R. Filter; Watkins tank developer; Cyko soft print.

1257. *Wm. Lieberman*.—"Guarding the Channel." The subject itself is a very difficult one to make pictorial. A very skillful impressionist might possibly succeed, but taken in the bold uninteresting way it has been photographed, there is nothing picturesque in it—no atmosphere, no recession of parts, no aerial perspective. The hills which ought to suggest their distance are literally on top of the posts and the sky is in the same line with the water.

1258. *Elmer Stuerman*.—"Sis." A good subject like this ought to have had a better treatment. The pose is good and characteristic, but this must be attributed largely to the model herself. The attitude is graceful and pleasing and you must have some credit for your appreciation of the suitability of the subject for your camera purpose, but you should have chosen a better illumination. There is no light and shade on the face, and the strong light obliterates the eyes and causes the incidental frown, instead of a natural, pleasing expression. The time of day, or direction of light militated against success. Try it again with such a good model.

1259. *J. R. Webb*.—"Along Mill Creek." Entirely too black and white, due to excessive undertiming. Neither the fine character



No. 1263. *Data*.—8 x 10 Century; Zeiss lens; *f* 6.3; August 4 P. M., good light; 1-100th second exposure; pyro developer; Azo print.

of rock, foliage or snow is brought out. Indeed the snow presents more the appearance of whitewash. The character of the illumination under which the exposure was made was particularly unsuitable for such a subject which even under most suitable light conditions, demanded care and skill in development to keep down the liability of contrast.

1260. *H. P. Palmer*.—"October Haze." The haze is not particularly indicated, but the composition is quite pleasing and the perspective both linear and aerial good. A little trimming, however, we think, improves the view and brings out better its good points; besides cutting out parts which contribute nothing essential to the picture and also associating the different parts of the view in a better relation with more unity.

1261. *Dr. J. M. Pierce*.—"Cataract Falls." The chief fault of this photograph lies in the hardness. We miss the fine effect of half-tones. The subject is merely black and white without intermediate gradation. This excessive contrast prevents the record of the tonal structural nature of the rocks, and inadequately presents the water of the cataract. Besides, the lack of half-tone destroys perspective. There are no varying planes of recession, all is presented on one uniform flat surface.

1262. *G. B. Brown*.—"Three Geese." The photographic quality is nil. The contrast is too intense, besides, the main feature of the subject, the geese, are but slightly in evidence.



No. 1260. *Data*.—5 x 7 Century Grand; Centar lens; U. S. 16; October 11 A. M., bright light; 1-25th second exposure; pyro-acetone developer; Cyko print.



No. 1264. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$; 3 A Kodak Special; Bausch & Lomb-Zeiss Tessar 11b lens; $f/6.3$; January 10 P. M., bright moonlight; 10 minutes exposure; pyro developer; Cyko print.

1263. *J. Ziegelbaum*.—"At the Well." There is no attempt at composition and the vast extent of the surroundings looks like a waste of plate. It is purposeless. The costume of the model is very unpicturesque, and she is practically doing nothing but posing for a picture. The two buckets need not have been both placed in the same line, one should have been placed upon the floor. The great long pole reaching to infinity serves no purpose by its length. Cut the photograph down to $3\frac{1}{2}$ by 2 inches.

1264. *J. I. Saad*.—"January Moon." A very effective piece of photographic work, indicating admirably the characteristics of night, but you have extended the view too much at both ends. As it is presented the composition is interfered with. The picture is too evenly balanced but by simply excluding portions to the left and right which have little of interest and so advantageously disposed of, you convert your subject into a much charming and original picture. You get rid of distracting elements and at the same time effect a good composition.

1265. *R. Dissing*.—"Twilight." The sky is the only good feature in the view. The shadows are too dense and lack luminousness. The short exposure secured you the beautiful sky, but was not sufficient to get the shadows properly. We give you credit, however, for artistic taste, inasmuch as we feel that the natural view itself must have been an attrac-



No. 1266. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Premo; R. R. lens; U. S. 32; September 1 P. M., 1 second exposure; Elon-hydro developer; Azo hard C print.

tive one, such as a painter delights in. The limitation of photography was the impediment, but this the photographer has always to consider in selection.

1266. *O. H. Kittleson*.—"After Lunch." The landscape setting is quite attractive, but the figures are presented entirely too large and the grouping is not at all pleasing. The lounge which properly belongs to home comfort looks eminently out-of-place in such a scene; besides, it forms a most unpleasant mass which requires some little effort to determine what it is. If you must needs



No. 1269 *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Ansco; rapid symmetrical lens; U. S. 8; March 4.15 P. M., light clouds; 6 seconds exposure; Eastman M. Q. developer; Azo E hard X print.

introduce it for the comfort of the group, why did you not have the man behind it seated with the rest, so as to hide it as much as possible?

1267. *H. J. Fromm*.—"Five O'clock Tea." This is a poor animal study, but little of the porcine disposition of the pig is indicated. We presume the animal is feeding, from the title alone, not from the picture. There is no attempt at composition. The uninteresting accessories do not help us a bit to interpret the motive.

1268. *A. A. King*.—"I See a Bird!" A good animal study with the camera. The feline characteristics are well presented, and the expression good, and animated. There is shown considerable indication of movement and cat-like activity. The photographic quality is also good.

1269. *Charles S. Kleisch*.—"At Home." The photographic quality is good, and the illumination well managed. There is a little distortion caused by the projection of the feet, which has brought these members too close to the camera and so exaggerated their size, causing them to appear out of proportion to the rest of the body. This is a particular feature to observe in full length portraits, and is best overcome by use of a lens of considerable focal length compared with the size of plate.

tically it can be considerably advanced by a little judicious trimming of the print. The two main masses, to the left and right, are too much of one size and of equal intensity and distract the eye from the main attraction of the view. The left mass is the more interesting and the incidents in it more pleasing, so the cutting had better be done at the right to the extent of about half an inch.

1272. *Louis Zobel*.—"The Country Girl." The photography is good and the lighting of the figure pleasing, but there is room for much improvement in the pose of the figure. The subject is too self-conscious and is somewhat awkwardly presented, just on this account. The country girl is not in the least interested in the flower she is so intently gazing at, but is solely anxious about the camera result. How much better it would be to represent



No. 1273. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Goerz Ango; Dagor lens; f 8; February 5.30 P. M., good light; 3 seconds exposure; Duratol developer; Cyko professional print.

1270. *Chas. D. Meservey*.—"Gipsy Girl." Excellent in pose and general management of the figure, presented with natural ease and grace. A trifle more snap in the lighting would have made the picture more effective. The tone is too uniform, it wants a little more accentuation in the high-lights and more variety of light and shade in the drapery. The subject is a good one, however, and we recommend a repetition of it with the suggested improvement.

1271. *C. H. Muntzinger*.—"Cuyahoga Falls." The photographic quality is excellent, and the subject well presented. Artis-

her plucking the flower or engaged in something in accord with country life or manners.

1273. *R. Trowbridge*.—"Sunset." A beautiful sky composition exhibiting admirably the sky prospective and the proper recession suggestive of atmospheric effect. The reflection is also well brought in as a supplementary additive attractive feature. The spacing is good and the horizon line well taken to exhibit the major feature of attractiveness, the cloudy prospect. The masses of light and shade are well balanced. Altogether a well conceived pictorial composition.



No. 1276. *Data*.—4½ x 6½. Conley Model XV; R. R. lens; f 16; March 2 P. M., faint light; ½ second exposure; pyro tray developer; soft studio Cyko print.

1274. *Edwin Bradley*.—"Playmates." A good animal study, exhibiting something of the life history of the little creatures and therefore of much interest biologically.

1275. *L. Shaw, Jr.*.—"Artificial Light Studies." The group taken with the flashlight is much superior to the two views taken by electric light. The photographic quality is better for the reason that the quality of the flash is softer and gives less contrast. The grouping however is a little too regular, but we admit that the disposal of so many individuals in a limited space presents much difficulty to artistic arrangement.

1276. *Joseph Korte*.—"Outdoor Study." The photographic quality is poor. The lighting is too flat and there is no gradation. The pose of the figure is awkward and constrained and there is no reason why she should assume an attitude like the one taken, other than with the purpose of having a portrait of herself, which could be better done inside. The ungainly tree trunk looks top heavy, and the roof of the house looks like a knapsack upon the back of the model. The landscape too is badly managed as a background setting. One can hardly call such a subject a study.

1277. *L. H. Hayes*.—"Minnehaha Falls." It is a pity that such a good piece of composition should be marred by the unpleasant

coloring inflicted upon it and upon artistic taste. It needs nothing of such addition and deserves the right to have its initial good features divorced from this unwholesome association. You show that you have most excellent appreciation of the value of line and spacing, and indeed we may say in this respect your view of this Fall is the most pleasing presentation of it we have seen. But why did you thus disfigure it?

1278. *A. D. Shiland*.—"On Top the Hill." The title is in no way appropriate. The dilapidated tower claims the whole attention, but there is nothing picturesque in this. No attempt at composition whatever, in fact, not worth the exposure of a plate. Your curtailed enlargement improves the photograph somewhat, but not much. The subject is hardly worth trying to improve.

1279. *Mrs. L. O. Janeck*.—"Cowiche Creek." There is no attempt at composition which means the association of different things to a unified idea. Now the "Creek" is the main feature of attractiveness in the view; indeed, it is the only picturesque element, but the surroundings you have selected, only detract from its initial beauty. You should have so managed that the creek would not have been blocked up by the mass of black uninteresting hillside, with the two trees like sentinals ready to arrest its course. The creek certainly has windings which would give glimpses of the distance and which would have given us something more of a picture than this.

1280. *F. W. Robinson*.—"After the Gale." A pleasing picture possessed of much sentiment and particularly suggestive of the title. The composition is excellent in line, and the idea of atmospheric effect well presented. The only feature we do not like is the bare slender tree trunk to the right. It might be vandalism to use an ax here and we certainly would have hesitated to apply such heroic treatment. The painter would have left it out in his finished picture.



No. 1280. *Data*.—5 x 7 Eastman View; Plauto-graph (with Ray Filter) lens; U. S. 16; February 2 P. M., ½ second exposure; Rodinal developer; Azo E hard print.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

Producing a good film is only half of the battle; you have yet to sell the negative and realize a profit, and although there may exist a market for same close at home, a national circulation is advantageous in many ways.

Of the numerous motion picture producing concerns which spring up in the course of a year, many fail, because they have to maintain an expensive string of exchanges in various parts of the country in order to rent their productions to the regular exhibitors. I have known free lance motion picture photographers, who have gone so far as to open up offices in New York City with this end in view. The facts are these: The market is fully supplied by the organizations at present in operation, and to compete with their excellent and far reaching resources is attempting the impossible.

It is a thousand times better to be relieved of this complex and expensive detail, so it pays to work in with the regular producing concerns, and thereby concentrating your energies in the producing end.

I may as well tell you right now that, when producing for the national market, it will not do to turn out subjects as fancy may dictate; they have got to stand a sterner test. Will they prove acceptable to a discriminating public? Keep your eyes well peeled in the output of the regular producers and you will discover the types of pictures which are mostly sought after. Better still, take in one of the motion picture trade journals regularly and read the reviews of the one hundred odd productions released weekly.

One of the best markets open for educationals is that offered by the Universal Film Manufacturing Company, whose address is 1600 Broadway, New York, N. Y. They are frequently in need of "fillers" to complete a reel, for which purpose they find snappy educationals very handy. Do not get the hunch that if a meritable lengthy production came along they would refuse to consider the same; they took over the Williamson Submarine Pictures and made a big financial success of them. They prefer to purchase negatives outright in all cases, and I believe that you can rely upon liberal treatment. Mr. George Kann is in charge of the educational department.

The Educational Films Corporation has been formed to supply schools, churches, clubs, hotels and private residences with motion picture entertainments, and are open

to negotiate with any cinematographer who has the goods. Mrs. Katherine F. Carter, 171 Madison Avenue, New York, N. Y., is the person to communicate with.

The picture editor for the Paramount Pictures Corporation informs me that they are always pleased to consider new, entertaining educationals. The address is 495 Fifth Avenue, New York, N. Y.

A final warning—do not produce for these markets on chance; you may have your time, money and labor for nothing. It is best to take up each subject first with the companies likely to be interested, as by taking this precaution you will be reasonably assured of a market for the completed article. At the same time you will probably be in receipt of advice which will help you to proceed along the right lines.

I have often wondered why hospitals do not adopt the most effective medium in order to secure funds. Need I add that the motion picture is the one I have in mind? It is not easy to persuade people to visit the hospital to show them how badly it needs financial assistance, and even though many folks, prominent in local charity work may be attracted, the masses have yet to be reached, and their small contributions are not to be despised.

Newspaper advertising seldom produces the desired results, for the announcements seem unconvincing in cold print.

Perhaps a better plan is to inaugurate a "Tag Day," yet same fails to induce the "Man from Missouri" to loosen up. It has got to be proven to him that the hospital actually needs his money, and as one out of every five persons visits the motion picture theater at least once weekly, this is the logical medium.

The motion picture tells the truth as no other medium can; in fact, it is next best to paying an actual visit.

The Mercy Hospital, of Kansas City, Missouri, recently had a film produced so as to raise funds for erecting a larger home. In the film are many crippled little children formed in lines waiting for their turn of treatment at the hospital's clinic. Long rows of over-crowded beds and inadequate facilities for surgical operations and treatment also tell the truth only too well.

Suppose you persuade the local hospital to have a film produced, what should you charge? It is hard for me to answer this question offhand, because everything depends

on the character and length of the production. But the most inexpensive and at the same time most convenient to the exhibitor, is the one-reel subject which "takes" folk through the hospital, as then no other expense is involved in production than the bare necessities—an important factor in securing the assignment. The average price is fifty cents per foot, so assuming the production is a one-reeler—one thousand feet—the cost would amount to five hundred dollars. But as at least one positive will be required, a further charge of one hundred dollars will have to be made.

Kansas is wide awake, for the State Board of Administration has a movement on foot to reveal the true economic status of the state. "Few people have seen 'strip' coal mining and few know that larger steam shovels are at work in Kansas than any used in digging the Panama Canal," said Lee Harrison, secretary of the Board, in a newspaper interview. "Our dairy industry, wheat farming, salt works, gas and oil fields, packing plants, cement works, tile factories, lead and zinc mines, smelters, cornfields, alfalfa farms, stock farms and many others, furnish material for film subjects that will put Kansas 'on the map' in much truer style than the films sold to schools by one big concern, which shows a round-up on a cattle ranch where the cowboys are dressed in leather chaps and wear broad-brimmed hats."

It is nothing new for a state to have a series of films produced, but Kansas has devised a distributing plan a wee bit different from those that have gone before. The films will be shown in the schools throughout the state, for which purpose a circuit will be arranged.

No town is without its complement of screen struck girls and boys, and it is reasonable to suppose they will make your studio their first port of call. You may or may not be able to use them in your local productions, but those who aspire to be Mary Pickford's and Francis X. Bushman's will not remain content until they have secured an engagement with a national producing concern, so you should sound a note of warning.

"There is not one opportunity in a thousand of getting into motion pictures," remarked Lillian Walker, the Vitagraph favorite, to me the other day. "First is the geographical situation, for the two chief producing centers are New York and Southern California. There are so many players with stage experience seeking engagements, that the novice's only chance is as an extra, but that position is a too precarious means of livelihood for me to recommend. There are, of course, 'finds', but most of these are the result of influence, so I would advise them to stay where they are and not permit their enthusiasm to go beyond the magic white screen. The rosy side of our work, as they see it, offers no disappointments."

The College of Physicians and Surgeons

intends using the motion picture as part of their course of instruction. At the first demonstration held in New York City during March, 1916, five phases of surgical operating were dealt with in a five-reel picture. The chief subjects, the removal of a goitre in the neck and the removal of stones from the bladder, were handled by Dr. Eugene Pool, of New York Hospital, and Dr. Charles Peck, of Roosevelt Hospital, both of whom lectured upon them.

The films were shown to an audience of two hundred in the tower lecture hall, in which a fireproof booth was installed to accommodate the operator.

The picture was produced for the Clinical Film Company by Dr. J. Bentley Squier, and, in the opinion of Walter M. Brickner, editor of *The American Journal of Surgery*, the first satisfactory film of surgical operations that has yet been produced.

The problem with employees working in outlying districts is to keep them thoroughly contented, for the call of the city is strong. The Hercules Powder Company, of Wilmington, Delaware, has solved this problem by giving motion picture entertainments. Their private theater is equipped with a muslin screen, 11 x 13 feet. A coating of size and calcimine was first applied, the cost of the whole being about \$10.

To ensure protection from fire, a fireproof operating booth, at an expense of \$25, was purchased. This houses the Powers 5, a projection machine, involving an outlay of \$110. Direct current is furnished by a motor generating set.

It would have cost a substantial fee to hire the services of an operator, but the Hercules Powder Company deemed it would prove profitable in the long run to place one of their employees under the charge of a motion picture operator in Salt Lake City. The concern defrayed the expenses of instruction, but were compensated by their man giving his services free.

The motion picture as a factor in public education has been the subject of inquiry by a parliamentary commission, which has just published a report recommending the official adoption of picture instruction by all French government schools and colleges. Military hospitals have been using moving films for the physical re-education of disabled war victims, and one primary school in Paris has introduced cinematograph projections in its curriculum. In both cases the results have been most encouraging.

The report explains the application of film education in its general outlines. In primary schools, for example, spelling, writing, arithmetic, geography and especially history can be illustrated on the screen with greater vividness than by the teacher, whereas in more advanced schools the study of foreign languages can be profitably supplemented by views of the countries where these tongues are spoken, their customs and institutions.

In high schools the cinematograph would play an even more important role, especially in the study of science. Chemistry, botany, biology, mechanics, etc., particularly in their comparative aspects, lend themselves more than any other study to film-illustration, particularly as it is possible to stop the film at any moment so as to emphasize or reiterate some point. Public lectures and patriotic instruction are also, as has been repeatedly proved, greatly aided by the cinematograph.

The commission is of opinion that the ministry of public instruction should either create a special source of production for these films, or, with the help of editors of cinematograph films, establish a repertory of already existing films which could be utilized for educational purposes and give orders for creating new ones to suit the needs of schools and colleges. The widespread continuous demand for such films would amply repay the cost of production.

THE 1916 KODAK ADVERTISING COMPETITION

\$3,000 CASH

TELLING THE STORY

The backbone of our national advertising is based on photographs that we receive through these annual competitions, pictures that tell of the charm of picture making by the simple Kodak method.

These pictures are not necessarily pictures made with Kodaks, but are pictures showing Kodaks or Brownies in action, pictures that suggest the delights of amateur photography.

They are not for sample print work, but are for illustrating advertisements, are for use in telling the story of the witchery of Kodakery.

The use of photographs as illustrations in advertising is growing steadily, rapidly. For the photographer who goes thoughtfully and carefully at it there is good money in making such pictures. There is a growing market. Our competitions offer to the photographer an interesting way of taking up such work. And the prizes are well worth while.

TERMS

1. Each picture is to contain a figure or figures and is to be suitable for use as an illustration in advertising the Kodak or Kodak system of amateur photography.

2. Pictures may be of any size, but as they will often be reproduced in large size, large pictures will, *everything else being equal*, be given the preference.

3. PRINTS ONLY are to be sent for competition—not negatives.

4. Prints must be mounted but not framed. (Mounts should show about one inch margin.)

5. The winner of the first prize shall be awarded no other prize and no competitor shall be awarded more than two prizes. (This does not prevent a competitor from entering as many pictures as he may desire.)

6. Due and reasonable care will be taken of all non-winning prints and, barring loss or accident, they will be returned to their owners at our expense, but we assume no responsibility for loss or damage.

7. The negatives from which all prize winning prints are made are to become the property of the Eastman Kodak Company, and are to be received by it in good order before payment of prize money is made.

8. Contestants who are awarded prizes must also furnish to us the written consent of the subject (in case of a minor, the written consent of a parent or guardian) to use the picture in such manner as we may see fit in our advertising, as per the following form:

For value received, I hereby consent that the pictures taken of me by proofs of which are hereto attached, or any reproduction of the same, may be used by the Eastman Kodak Company or any of its associate companies for the purpose of illustration, advertising or publication in any manner.

(Use this Form for a Minor)

I hereby affirm that I am the Parent/Guardian of and for value received, I hereby consent that the pictures taken of him (or her) by

proofs of which are hereto attached, or any reproduction of the same, may be used by the Eastman Kodak Company or any of its associate companies for the purpose of illustration, advertising or publication in any manner.

NOTE.—Blank forms will be furnished on application.

*9. All entries should be addressed to
EASTMAN KODAK COMPANY
Advertising Department Rochester, N. Y.

*Entries from Canada should be sent to the Canadian Kodak Company, Toronto, Canada.

10. In sending pictures, mark the *package* plainly, "Kodak Advertising Contest," and in the upper left hand corner write your own name and address. Then write us, addressing "Advertising Department," and advise how shipment was made, mail or express, date, etc., and tell *how many pictures you are sending*.

11. The name and address of the competitor must be legibly written on a paper and enclosed in a sealed envelope in the same package in which the prints are forwarded. There is to be no writing on prints or mounts.

12. We will promptly acknowledge the receipt of pictures, and when awards are made, will send each competitor a list of prize winners.

13. This contest will close November 1st, 1916, at Rochester, N. Y.; and October 20th, at Toronto, Canada.

THE PRIZES

First Prize	\$1000.00
Second Prize.....	500.00
Third Prize.....	350.00
Fourth Prize.....	250.00
Fifth Prize	200.00
Sixth Prize	180.00
Seventh Prize	160.00
Eighth Prize	140.00
Ninth Prize	120.00
Tenth Prize	100.00

The winner of the First Prize shall be awarded no other prize and no competitor shall be awarded more than two prizes.

SUGGESTIONS

First of all, it should be remembered that these prizes are not offered for the sake of obtaining sample prints or negatives made with our goods. *Merely pretty pictures, artistic pictures will not be considered.* The pictures must in some way connect up with the Kodak idea—must show the pleasure that is to be derived from picture taking, or the simplicity of the Kodak system, or suggest the excellence of Kodak goods. Must, in short, help to sell Kodak goods, by *illustration* of some one of the many points in their favor.

The jury will be instructed to award the prizes to those contestants whose pictures, all things considered, are best adapted to use in Kodak advertising.

As reproductions of the pictures will often be in small sizes, too much detail should not be introduced.

Pictures for reproduction should be snappy—vigorous, for they lose much by the half-tone process.

Where apparatus is introduced, it must be up-to-date. If you haven't the goods, you can borrow. Apparatus should also be in keeping. A 3A Kodak in the hands of a child is not convincing combination.

It is highly probable that we shall want to secure some negatives aside from the prize winners. In such cases special arrangements will be made.

The jury of award will consist of photographers and of advertising men who are fully competent to pass upon the work submitted. Full attention will be paid therefore to the artistic and technical merit of the work as well as to its strength from an advertising standpoint. Announcement of the names of the judges will be made later.

EASTMAN KODAK COMPANY
Rochester, N. Y.

Cleveland, Ohio.

Gentlemen: I received the set of books "Amateur Photography" in first-class condition for which please accept my sincere thanks, I think it a great work. You certainly deserve credit for placing such a work before the Amateurs at the moderate price at which this offer is made. Thanking you again.
WM. E. STAIGHT, JR.

WINNERS AT PHOTOGRAPHIC
DEALERS' CONVENTION

First Prize, "Doris and the Soap Bubble." R. C. Nelson, Hastings, Nebraska. See our cover design.

Second Prize, "Sunlight" H. Krebs, Washington, D. C. See page 263.

HONORABLE MENTION

1. "The 'Cellist,'" G. C. Kehres, Cleveland, Ohio. See page 264.

2. "Interested," Clarence Stearns, Rochester, Minn. See page 271.

3. "Study," Frank Moore, Cleveland, Ohio. See page 268.

4. "Mother and Child," Clifford Norton, Cleveland, Ohio.

5. "Study," Rembrandt Studio, Philadelphia.

AMATEUR CLASS

First Prize, "Lucerne," W. T. Higbee, Cleveland, Ohio. See page 259.

Second Prize, "The Abating Storm," Lysander E. Wright, East Orange, N. J. See page 360.

HONORABLE MENTION

1. "The Husbandman," Albert F. Snyder, Utica, N. Y.

2. "Italian Woodland," W. H. Porterfield, Buffalo, N. Y. See page 272.

3. "Patient Jim," Thos. C. Martindale, Philadelphia. See page 267.

4. "Portrait," Dr. C. F. Rodgers, Conneaut, Ohio.

5. "Against the Sky," E. R. Stancliff, Los Angeles, Cal. See page 281.

WINNERS IN THE WANAMAKER
COMPETITION

First Prize, \$100—"The Shaving of Shagpat." Charles B. Keeler, Cedar Rapids, Iowa.

Second Prize, \$50—"The Launching," Charles O. Haimovitz, Philadelphia, Pa.

Third Prize, \$25—"Bacio della Luna," Williamina Parrish, St. Louis, Mo.

Five \$10 Prizes—"Pennsylvania Station," Thomas C. Martindale, Philadelphia, Pa. "Toxophilus," Edward Henry Weston, Tropico, Cal. "A Stair of Romance," Roger B. Whitman, New York City. "The Porterfield Poplar," Karl Struss, New York City. "The Butter and Egg Girl," Mary W. Wiltse, Philadelphia, Pa.

Ten \$5 prizes—"An Old Ballade," Alice Boughton, New York City. "The Approaching Storm," Ernest L. Crandall, Washington, D. C. "In High Altitudes," Rudolph Einwald, Milwaukee, Wis. "The Goddess," W. G. Fitz, Philadelphia, Pa. "West Point Cadets," H. P. Kingsmore, Philadelphia, Pa. "Siegfried," Williamina Parrish, St. Louis, Mo. "The Phantom. Span," H. Crowell Pepper, Cleveland, Ohio. "Along the Canal," W. H. Porterfield, Buffalo, N. Y. "Florentine Pines," Karl Struss, New York City. "Dolores," Edw. H. Weston, Tropico, Cal.

Letters to the Editor

Dear Sir: I thank you for awarding me the second prize in your Monthly Competition, No. 202. I am more than happy that you liked my picture.

Rainier National Park is such a wonderful place. For the past five years, we have spent our vacations, wandering there, and we have only begun to see it. Many are the pictures I have taken there; most of them are in a box, hidden in the dark-room, but not wasted for I had the pleasure of taking them. And now that I have won two prizes, I'll take another look at that box, maybe it isn't so big as it used to be.

I wonder if you would care to hear the adventure we had the day that picture was taken?

We had just crossed Emmon's Glacier which was well crevassed. One of our party was just being introduced and didn't like them, so refused to go back that way. I could sympathize for I hadn't forgotten the first crevasse I crossed. It was too narrow to fall into, but it grumbled so, down in its throat, I felt as if it would open its mouth and swallow me up just as I went over—so I made a big jump and got over too quick for it.

Going around the Glacier meant miles down the Frying Pan River to its union with another and then miles up to camp. Our map made it sixteen, but didn't say anything about the time we should have finding the trail.

It was getting dark when we got to the union of the rivers. The bridge was gone and our trail was on the other side. It began to rain, a steady downpour.

We tried and tried to put logs across; to wade was out of the question, the stream was not so deep, but so swift. There was a constant booming sound as the rocks were moved by the water.

Finally we took refuge for the night in a deserted mining cabin we had discovered about a mile away. And there was a blessed pile of dry bark, eight and ten inches thick, monstrous pieces!

Did you ever sit by a bark fire in the woods, when you were wet? Oh, the joy! I never will forget it.

Our supper was two crackers divided into six pieces, for we had only brought lunches with us. My shoes were my pillow, and the focusing cloth my cover. The ground was softer than any old board.

At dawn we began working again, and after two hours, crossed the river on logs.

Then began our eight-mile climb to camp and breakfast. We had to lean hard on our alpine stocks, and rest often toward the last, and corn meal mush was all we could talk about. We had it at noon and it was better than ever before.

ELLA R. CHASE

Wilmington, Del.

Gentlemen: I received the *Library of Amateur Photography* with one year's subscription to THE CAMERA and to say that I am very much pleased with the books and the magazine expresses it very mildly. These books are all and more than you advertised them and were I not able to get another set, I would not part with them for many times the \$2.50. I look upon this as the best \$2.50 that I have ever invested along this line. I wish also to thank you for your very prompt shipment of this set of books.

J. H. BEGGS

Dear Sir: The sixty-first annual exhibition of the Royal Photographic Society will be held as usual in August and September of this year. In order to facilitate the collection and forwarding of scientific exhibits, I have been appointed one of the judges in the Scientific section of the forthcoming exhibition and have made arrangements to receive photographs from American workers and to forward them to London, thus relieving the photographer of all difficulty or expense.

I should be very glad to hear from any American photographer who wishes to enter photographs in the Scientific section of the exhibition of the Royal Photographic Society and to forward him an entry form.

For some years now the American exhibit in the Scientific section has been a comprehensive one and of great interest to European workers as showing what has been done on this side of the Atlantic, and it is earnestly desired by the Council of the Royal Photographic Society that the United States should continue to be fully represented in this exhibition.—C. E. KENNETH MEES, *Research Laboratory, Eastman Kodak Company, Rochester, N. Y.*

A DEVELOPER FOR GASLIGHT PAPERS WITHOUT METOL

We are indebted to the Ansco Co., for the following formula that gives beautiful results on developing papers.

A

Pyro	180 grains
Sulphite Soda (dry)	3 ounces
Ferro-cyanide Potassium ...	30 grains
(Yellow Prussiate)	
Water	16 ounces

B

Sodium Hydrate	60 grains
Water	16 ounces

For use, take 1 ounce A, 1 ounce B, and 2 ounces water. Add one drop saturated solution of Bromide of Potassium to each four ounces of the diluted developer.

Prints develop in from 1 to 1¼ minutes. The solution can be used repeatedly without stain.

Soft results can be had by diluting the developer.

It can be used for sepias as well as blacks.



The annual exhibition of the "Fotocraft" will be held in the Fine Arts Gallery of the Bangor (Maine) Public Library on May 15th to 27th.

If our readers are interested in motion picture apparatus, a postal request to G. Gennert, 24 E. 13th Street, New York, will bring a complete catalogue.

The twenty-sixth annual exhibition of the Department of Photography of the Brooklyn, N. Y., Institute of Arts and Sciences opened on Thursday evening, April 27th, and will remain on view until May 21st.

Photography has discovered the depth to which the sun's rays penetrate water. Five hundred and thirty feet below the surface, darkness was much the same as that on earth on a clear but moonless night.

We are advised by the Berlin Aniline Works, 215 Water Street, New York, that they have been able to obtain a metol substitute, made by a reliable chemist in the United States. The prices range from \$2.75 per ounce to \$39.50 per pound.

A new catalogue of Wollensak lenses and shutters reaches us this month. Examples of work with descriptive matter face each other in the catalogue, a copy of which may be obtained from the Wollensak Optical Co., Rochester, N. Y.

G. Gennert of New York City has opened a branch house at 455 South Olive Street, Los Angeles, Calif.

Silver salts, used for sensitizing films in photography, and lost forever in the process, are accounting for about 15,000,000 ounces of silver a year on the side of the motion picture industry alone.

James H. Smith & Sons Co., 3543 Cottage Grove Avenue, Chicago, favor us with a very interesting booklet entitled, "Has every cloud a silver lining for you?" which thoroughly describes the use of Victor Studio Flash Cabinet and Victor Flash Powder.

A new camera—Auto Fixt Focus—has just been placed on the market by Herbert & Huesgen Co., 18 E. 42d Street, New York. It is a "Made in America" camera, using $2\frac{1}{4} \times 3\frac{1}{4}$ roll film and fitted with an anastigmat lens.

Rochester, N. Y.

Dear Sirs: It is with great pleasure that I thank you for the prompt delivery of "The Library of Amateur Photography," and also your magazine, and as far as I have gone through them, think they are well worth the money.

ELMER A. CUSHMAN

If one would care to enjoy a vacation right in the thick of the Jersey pines and on the banks of the Manasquan River, with the Atlantic Ocean just one mile away, "Pine Bluff Inn," situated at Point Pleasant, N. J., under the management of Mr. E. H. Carlisle, is one of the most delightful places that we ever visited. There is everything that the vacationist could possibly desire, right at Point Pleasant—golf, tennis, boating, shooting, and everything in outdoor life. Another thing, it is a place where you do not have to put on a whole lot of frills and make yourself uncomfortable. You can rough it, if you desire.



"SOARING." GEORGE F. COGGAN, PASADENA, CALIF.

SHOOTING SEA GULLS

I am sending the enclosed prints for publication in *THE CAMERA* trusting my method for getting the results I have may prove interesting to your readers. The two prints shown look to the average photographer as a perfect combination of cloud effect and pose.

I have noticed recently attempts at gull shooting and the results were usually hopeless. I have several negatives that are equal to the prints shown.

To get the combination of cloud and bird is almost an impossibility at one exposure. I first made some negatives with the cloud effects I wished. My next move was the bird. I used a 3A Graflex one morning when no clouds were visible, the results were negatives with only a bird. It was then an easy matter to place the bird negative on the cloud negative and print from the two. The time exposure is only lengthened a second or so, enlargements can be made the same way, the results being satisfactory.—GEORGE F. COGGAN.

A WONDERFUL DISCOVERY

Dr. Manuel Perez Amador, director of the Government Institute for Biological Research in Mexico City, claims to have discovered a method for taking radiographs without the use of any of the usual X-ray apparatus. He dispenses with high-tension coils, Crookes tubes, radium, etc., and in place thereof uses an ordinary electric bulb lamp with a metal shade, the inner surface of the shade being coated with crystals of highly purified white sulphur. A demonstration is reported to have taken place in the presence of a number of scientific men, when the image of the skeleton of a lizard was secured on the photographic plate by this means, the reflected rays penetrating the body of the lizard and the protecting dark slide.

This announcement will doubtless cause considerable excitement in surgical circles, and it certainly opens up a wide field for experimental and research work. We are not told whether the filament of the lamp was carbon or metallic; if it is heat which excites the sulphurous crystals it will probably be a carbon filament lamp, but if it is light rays which have this effect, then a metal filament lamp would suggest itself as being more suitable.

There are quite a number of salts which give off invisible rays of one kind or another, in the same manner as zinc sulphite, in the form of luminous paint, gives off rays which come near the violet end of the spectrum, and are visible. The weakness of the rays emitted from salts, as compared with Roentgen or so-called X-rays, has prevented a practical application, but now that Dr. Amador has succeeded in making a radiograph from rays emitted from the refined crystals of sulphur with the aid of such elementary apparatus as an ordinary electric lamp and tin shade, it is possible that the discovery may lead to remarkable developments.

We well remember being called in to participate in some experiments which resulted in the production of X-ray about two days after Professor Roentgen announced his discovery and we had the pleasure of being associated with the publication of the first radiographs which were produced in this country. It would be particularly interesting to follow up Dr. Amador's discovery, but, unfortunately, we fear there is a difficulty in the way of procuring sulphur crystals in such a highly purified form that they are white. Possibly the bleaching process is simple enough to the chemist, if not an entirely pleasing one, although sulphur, as we know it, has always been associated with a decidedly yellow color, however, we shall await with interest further developments.—*Photographic Dealer*.



"HOMEWARD BOUND." GEORGE F. COGGAN, PASADENA, CALIF.

SHORTAGE OF PAPER MATERIAL —SAVE WASTE PAPER AND RAGS

The attention of the Department of Commerce is called, by the president of a large paper manufacturing company, to the fact that there is a serious shortage of raw material for the manufacture of paper, including rags and old papers. He urges that the Department should make it known that the collecting and saving of rags and old papers would greatly better existing conditions for American manufacturers.

Something like 15,000 tons of different kinds of paper and paper board are manufactured every day in the United States and a large proportion of this, after it has served its purpose, could be used over again in some class of paper. A large part of it, however, is either burned or otherwise wasted. This, of course, has to be replaced by new materials. In the early history of the paper industry, publicity was given to the importance of saving rags. It is of scarcely less importance now. The Department of Commerce is glad to bring this matter to the attention of the public in the hope that practical results may flow from it. A little attention to the saving of rags and old papers will mean genuine relief to our paper industry and a diminishing drain upon our sources of supply for new materials.

A list of dealers in paper stocks can be obtained from your local Chamber of Commerce or Board of Trade.

WILLIAM C. REDFIELD, Secretary,
Department of Commerce, Washington, D. C.

BERMUDA USING AMERICAN PHOTOGRAPHIC MATERIALS

Hitherto a small portion of the materials used by dealers in photographic materials was imported from Europe, generally in tin-lined cases; now, however, all photographic materials are imported from the United States, usually in boxes lined with oil paper. The terms are usually cash, or in some cases payment in advance, with discount of 5 per cent.

Plates in centimeter sizes are not used. A case of plates 5 by 7 inches in dimension costs \$11 f. o. b. New York, the buyer paying the freight charges from that point, amounting on an average to \$1 for three cases. A dozen plates of the 5 by 7 retails for \$1. Plates are not sold by the case, because there is not a sufficient demand. A certified copy of the bill of lading should be furnished the buyer in order that he may make entry at the customhouse in Hamilton. It is not necessary, though perhaps advisable, to indicate the net and gross weights on the bill.

Dry plates are subject to duty at the rate of 10 per cent ad valorem and to an additional 10 per cent upon the normal amount of duty, which in effect makes the duty 11 per cent. No preferential rate of duty is accorded

to any country by Bermuda. English is the language of the islands.

The only steamship line between the United States and Bermuda is operated by the Quebec Steamship Co., 22 State Street, New York.

A list of dealers in photographic materials at Hamilton, Bermuda, may be obtained from the Bureau of Foreign and Domestic Commerce or its district offices. Refer to file No. 72649.—*Commerce Reports.*

PHOTOGRAPHS FOR "GOOD ROADS EVERYWHERE"

A nation-wide photographic contest in the interest of the "Good Roads Everywhere" movement, with cash prizes of \$2,600 open to everybody, was announced at the National Highways Association headquarters in Washington, D. C., recently.

Colonel Theodore Roosevelt and the two well-known writers, Miss Ida Tarbell and Mr. Mark Sullivan, will serve as judges in the contest.

The photographs selected in the competition will be used to establish in Washington a national exhibit on the good roads problem designed primarily to promote a nationally conceived scheme of highways.

In connection with the pending legislation in Congress to have the federal government shoulder a part of the task of "good roads" construction, the National Highways Association, it is explained, desires to have adopted a plan for a system of national highways, surveyed and located by expert engineers, so that federal funds will not be spent in a hit-or-miss fashion, but in accordance with a scientific plan as any railroad is built.

By means of the photographic contest it is proposed to gather a complete picture of the good and bad road problem as it exists in every section of the country, and this the Association will use in its effort to obtain scientific legislation from Congress.

PRIZES TO BE AWARDED

The cash prizes of \$2,600 were subscribed by General Coleman du Pont, Chairman of the Board of National Councilors, and Charles Henry Davis, President of the National Highways Association. The competition will be known as the du Pont-Davis Road Photograph Prize Contest.

The first prize, to be given for the most striking (good or bad) road photograph, will be a \$500 cash award. In all there will be 166 cash prizes awarded.

There will be 5 second prizes of \$100 each, 20 third prizes of \$25 each, 40 fourth prizes of \$13 each, and 100 fifth prizes of \$5 each, making 166 chances in all for each person entering the contest.

The competition will be kept open for eight months, closing at noon, Tuesday, November 7th. All photographs should be addressed to "Good Roads Everywhere" Photograph Contest, National Highways Association, Washington, D. C.

"A photographic paper that typifies the season."

With the first hint of spring,

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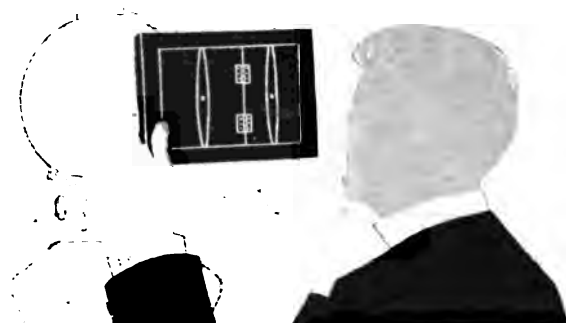
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PAPER

naturally suggests itself as a most fitting medium for the our-of-door pictures.

A rich green tone, true to nature, is secured by straight-ahead methods. After exposure by daylight, the manipulation of Kodak Velvet Green is similar to Velox.

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It is the photographic paper
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At your dealer's.

JUST TELL THE ADVERTISER THAT YOU SAW THE "ADVER" IN THE CAMERA


CHAMBERS PRESS
PHILADELPHIA

THE CAMERA



JUNE

15 CENTS

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ANSCO

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Anso Speedex
 No. 1A, 2½ x 4½ in., \$45.00
 No. 3, 3½ x 4½ in., 47.50
 No. 3A, 3½ x 5½ in., 55.00
 Anso Anastigmat Lens,
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ALMOST any camera will make a photograph if the place, the hour of day and light are right, but a real picture is seldom found where ideal conditions exist, and here is where an Anso Speedex comes into play.

It has reserve speed and lens power —yours to use when required, and you require them almost constantly —for action pictures, for pictures in wooded places, under porches, or to make short exposures on dull days —always with perfect definition, whether its anastigmat lens is wide open or its high speed is shut off to make time exposures indoors and out.

Catalog and specimen picture on Cyko Paper free from your dealer or us, on request. Anso Cameras come in 58 styles, \$2 to \$55.

ANSCO COMPANY BINGHAMTON, NEW YORK

JUST TELL THE ADVERTISER THAT YOU SAW THE "ADVER" IN THE CAMERA



Volume Twenty

JUNE 1916

Number Six

PRESS PHOTOGRAPHY FOR AMATEURS— BAYARD BREESE SNOWDEN

THE most unpleasant feeling for many amateurs is the realization that their hobby is costing a good deal of money. Let the Hobsons say what they will; we are a pretty temperate people, and excess in any direction strikes us as unwise and foolish. So when we have poured out our shekels rather freely on plates and films and chemicals, we sometimes stop and wonder whether our enthusiasm has not gotten the better of our judgment.

The number of amateurs who really make money out of their cameras or seriously desire to do so is probably very small, comparatively speaking, but the number who wish that their supply bills might be paid out of special funds, without drawing upon their regular incomes, is doubtless very large. To many of these the practice of free-lance commercial photography—the making of post-cards, etc., for friends and acquaintances at a low price—is a distasteful means of accomplishing this end, either because it entails considerable drudgery or because it seems too much like “small potatoes.” I confess that this has been my own attitude during more than a dozen years as an amateur. With a natural respect for my regular occupation, I have had no desire to be looked on as one who picks up nickels with a camera during spare hours. So when people ask me to make a picture for them or to do a little job of developing and printing, I prefer to do it as a friendly accommodation, dismissing the matter of payment. Others may not feel as I do, but for me it is much pleasanter to have my camera work looked upon as a cultural avocation. Besides, if I charged them what the job was worth, they would probably think the price too high, while if I charged them the mere cost of materials I would be unjustifiably cutting under the photographer who must make a living.

However, the cost of photography has always with me been somewhat of a problem, and I cannot see that the increase of my regular income has made much difference in this respect. Whatever one's income, great or small, it is pretty well taken care of by the demands upon it. Increases, as they come,

merely keep pace with the obligations of a civilized existence and the growing need of providing for the future. Looking back to the happy time when I received the princely salary of nine dollars a week, I realize that to plunk out fifteen or twenty dollars for a new camera at that time meant less compunction than it would mean today, although the twenty dollars would now seem much too little to pay for an efficient instrument. The value and uses of the dollar grow more evident as we grow older.

When I got my first camera, the purpose that it should pay its own way took firm root, and this purpose has been steadily adhered to from the start. In successfully carrying out this purpose, I have worked only one field, the field of newspaper and magazine publication, and I have worked this field to only a limited extent. Others, who read this article, can easily eclipse my results, according to their industry and application. For the benefit of those who have a desire to make the attempt, I will give a few hints as to the method, or, rather, give enough of my experience to make the method clear.

When I began as an amateur I lived in a suburban part of Brooklyn, N. Y., and was working in a publishing house in New York. It was this latter circumstance which suggested the sale of photographs to newspapers and magazines. I was in the art department, and one of my tasks was to enter up the photographs and drawings that went out to the engraver. The staff photographer was frequently in the office, and I suppose his interesting personality and the romantic life he seemed to lead, jumping to Florida or Newfoundland at a few days' notice, had much to do with firing my ambition. And I am sure the beautiful pictures sent in by amateurs from all over the country also stimulated my aspirations.

But being at that time a callow youth, without the knowledge or perspective that would give me entrance to the magazines, I first turned my attention to the Brooklyn papers, particularly two of them. When a new church was dedicated, or a new public building, such as a school or a hospital, was opened for use, I would take a picture of it and send it to one of these papers with a brief account of the opening or dedication. At other times I used to hunt up old landmarks, such as ancient farmhouses, milestones, etc., making pictures of them and working these into a "reminiscent story" of a half-column or so, in which attention was called to the relics of antiquity "in our midst," as "The Bingville Bugle" would put it. The search for such camera subjects was exhilarating sport for a Saturday or Sunday afternoon, and I was much stimulated by the imagined value of my researches. And I am not sure that I could possibly have spent my holiday hours in a more profitable way. I learned to take pictures, I learned to investigate, I learned to observe. And the city and its environs became a veritable mine of romance.

Gradually other illustration possibilities opened up. It was rumored that the tracks of a certain railroad were to be depressed at a dangerous crossing; I made a photograph of the crossing, and sent it to one of the papers with an explanation of the proposed change. Many similar opportunities offered, and I followed them up in the same way. Then I began to see where pictures



"DOROTHY." FIRST PRIZE AWARDED IN THE CAMERA COMPETITION No. 203
E. R. TRABOLD, ADAMS, MASS.

A very effective piece of portraiture. The head is well placed in the space allotted, so as to have it at the proper distance from the top. A lower position would have given less dignity and animation. The pose of the head upon the shoulders is easy and natural, conferring considerable grace, and the slightly forward inclination adds much to the effect. The lighting is also soft and modulated, and the high-lights of just sufficient emphasis to harmonize with the shadows, of which there is considerable range. The effect of keeping the lower part of the figure in deep but graded shadow shows much artistic taste and evidence of good judgment. It prevents all the unpleasant truncation or abrupt division of the figure—so often ruinous to a good composition. The background is also well and feelingly considered, so as to give proper relief to the head and a suggestion of atmosphere about it.



"EARLY SPRING." THE SECOND PRIZE IN THE CAMERA COMPETITION No. 203
M. KAWAMURA, LOS ANGELES, CALIF.

A well conceived piece of composition, with considerable range of light and shade and good management of the lines of the composition, that properly presents both linear and aerial perspective. The eye is led well into the picture and a good suggestion of distance given. The variety of the foreground adds to the interest by the connection it affords in bringing into relation the parts of the composition. The masses are well distributed and apportioned to effect proper balance.

suitable for some of the magazines might be obtained. One was of a canvas canoe, which a twelve-year-old boy had made at a cost of one dollar. Two pictures were made. A newspaper took one, a magazine the other. For the pictures and the short descriptive accounts I received about four dollars. Other little odds and ends like that presented from time to time. The hydraulic ram on a place at which I stayed one summer brought me five dollars, three hundred words of description with a photograph of the dam being used.

Such experiences led me to be watchful for news value in the things I saw, and I made a practice of taking a camera along to record the unusual or interesting. Some farm pictures I made one summer enabled me to sell an article on the help problem in the country to a leading magazine for twenty dollars. The article was not a literary production in any sense—just a straight-away explanation of the problem from the standpoint of an observer who had got the farmhand point of view. Many other examples might be given. The chief point in such work, I found, was to study the various papers and magazines to find out what sort of things they would be likely to use.

With magazines, I learned that it was often advisable to write first to the editor asking if he could use photographs, or photographs and "copy," on a certain subject. I would strongly advise others to follow this course when in any doubt. A while ago I wrote to a certain editor proposing several subjects upon which I might give him copy and photographs. One of the subjects he approved was "A Vacation Carriage Trip." I haven't taken that trip yet, but some summer I am going to, making photographs to illustrate the little episodes of the two-week journey. I mention this subject not because it is of any particular importance of itself, but because it illustrates another point worth noting here. Think of all the different ways of spending a vacation. If a person will only choose an unusual way, or go to some place that is interesting but not much talked about, so that the trip may bear an apparent air of originality, he can almost surely dispose of an illustrated account of it somewhere.

Newspapers, as a rule, do not pay much for the photographs they use, unless the photographs have a striking news value. Sometimes the pictures are paid for separately, sometimes they are measured up with the print, a rate of from two to five, sometimes eight, dollars a column being paid for the whole. However, they provide a real opportunity for the youthful amateur to meet his expenses, and point the way to the magazines. Photographs and copy should usually be addressed to the Sunday editor, and the copy should be marked "Submitted at usual rate," in the upper right hand corner. If the name and address are given in the upper left hand corner it is unnecessary to write a letter, but sufficient postage should be enclosed for the return of the matter if it cannot be used.

Of course, if one secures a picture of a wreck or a devastating fire or a sinking battleship, or anything cataclysmic like that, the first essential is to get the picture to the paper at the earliest possible moment, and in such a case it should be sent to the editor, not the Sunday editor. However, such opportunities are rare, and more money is to be made by the average amateur from

the sort of pictures usually featured in the Sunday section. If the distinction is at all vague, I would suggest that the interested amateur take a number of Sunday papers (preferably not the New York dailies, in which very little unsolicited matter appears) and make notes on the illustrated "stories" having a local or regional interest. One story may tell about an old house over the title to which a curious dispute has arisen. Others may tell of new public buildings—schools, hospitals, churches, etc.—as before mentioned. Another will tell of a completed bridge, or show where the bridge is to be. Still another may picture a new style of car which the street railway has just introduced, and so on. That is the sort of thing to go after. It does not require that one be a full-fledged newspaper photographer, capable of making a snapshot in the dark, nor does it demand any special equipment.

In many small cities the amateur can establish a profitable connection with the local paper, taking such pictures as the editor requires from time to time for an agreed amount. A daily paper in a city of twenty-five or thirty thousand inhabitants, or even larger, can seldom afford a regular photographer, and the reporters are usually too hard-worked to have much time or inclination for photography. Pictures are picked up in a hit-or-miss fashion, which is unsatisfactory to the editor, who at the same time cannot afford to hire a commercial or studio photographer except occasionally. Thus situated, he is rather glad to have someone he can turn to for making his pictures at fifty or seventy-five cents apiece for 4x5s whenever he wants them. I am not talking wildly when I say this, for I worked long enough as a reporter to know how the land lies. The weekly paper for which I was reporter for about a year, a decade or more ago, paid my supply bills in return for my making what pictures it desired. Those were halcyon days. I never figured up how much per photograph the compensation came to; the paper was satisfied and so was I. Later, when on the staff of a New York daily, I never had time for photography. If a story I was on needed pictures, a regular press photographer went along with me, and together we concocted schemes for getting the necessary exposures. If there was a woman in the case she generally gave a flat refusal at first, but almost invariably came around after a half-hour's coaxing.

One benefit I derived from my picture-making for the weekly paper just mentioned is worthy of comment. It was a paper covering a large district, and had a circulation of nine or ten thousand; so it took me to places where I wouldn't naturally have gone on my own initiative. Working for the paper made me see more opportunities for interesting pictures than I would otherwise have noticed. And I believe that any amateur, who gets into touch with his local paper and does its photographing, will have the same experience.

Some who read this article will be disappointed that it does not go farther and open up the other methods of making money by photography for the press. I have confined the discussion, however, to my own experience. Those in a position to profit by this experience will surely find other opportunities opening for them in what has always been to me the fascinating field of free-lance press photography.



"THE RUNAWAY." THE THIRD PRIZE IN THE CAMERA COMPETITION No. 203
A. M. VINJE, MADISON, WISC.

A good child study full of action and animation. The little one has been caught at just the moment when its position suggests acceleration, and hence, we have progress and not arrested action or petrification. The oblique line of the road also helps to suggest the action. Had the line been parallel to the base, much of the interest in the subject would have been lost by the suggestion of rest it would have given, just where action needs to be intensified.



"EARLY MORN ON FIFTH AVENUE." FIRST PRIZE, BEGINNERS' COMPETITION No. 4
W. I. SIMELIUS, JERSEY CITY, N. J.

A good and characteristic street view where the perspective of the picture is properly secured by a judicious trend of the oblique lines, which gives proper recession and also suggestion of movement to the pedestrians and vehicles along the road. The general lighting is also good, giving relief to the architecture by the throwing of the sides of the building in shadow and giving depth to the view.

TO MAKE AMATEUR PHOTOGRAPHY A SUCCESS—THINK!—A. H. BEARDSLEY

TO attain proficiency in every hobby or avocation, except amateur photography, the intelligent man is told that "practice makes perfect; that 'by keeping at it' " he may some day know how to play chess, build a house, run his auto, steer his boat or hit his game. When it comes to amateur photography, he is told how easy and simple it all is and that really very little thought is required to become an adept. Why should amateur photography be exempt from the requirements which alone secure results in other hobbies? As a matter of fact there are few avocations which require more time and effort than amateur photography. Today the anastigmat lens has come into its own. To tell any man that it requires no mental exertion to use it successfully is a serious mistake. True, some men understand it more quickly than others, but this is true of all hobbies and in no way authorizes us to say that the use of the anastigmat may be learned from one reading of the direction book. Amateur photography is simple. Rifle shooting is simple. I'll wager that the man who is learning to shoot a rifle goes at it in an entirely different spirit from the man who is learning to use a camera. Why? The former is told that it will take weeks for him to get the "hang of it;" the latter is told he can get results at once. This is a trifle over-drawn, I'll admit; but it is necessary to drive home my point that amateur photography requires just as much keen interest and thought as any other popular pastime in which you wish to achieve results.

The simplification of amateur photography is a wonderful study of the evolution of chemicals, glass, and mechanical engineering in the hands of those whose one desire is to simplify photography for the masses. They have succeeded. In one sense they have succeeded too well, for the public at large thinks always of the simplicity and hence does not even try to really understand the principles upon which success depends. Nothing is simple to you that you do not understand. It is an easy matter to raise your anchor, sail away with the wind, tack, jib, take a reef, anchor, pick up your buoy and land safely. However, no one expects a beginner to do these things efficiently without time and practice. Moreover, no one tells him how simple these things are and that he can sail as he pleases, providing he has a direction book in his hand. Yet, when the amateur photographer starts out he may figuratively sail around the globe, providing he does not misplace his direction book. Amateur photography is wonderfully simple, the direction books are clear and explicit and everything is in favor of the amateur's unqualified success if he will only read and *think*.

It is human nature to take greater interest in anything which taxes our mental and physical powers. A thing that is easily mastered or is considered simple, never arouses the same determination to succeed that we feel when we are confronted with a difficult task. Amateur photography is not a difficult task, neither is it child's play. Take for example the simple matter of loading

your Kodak. The direction book is explicit. Yet, witness the troubles that many amateurs have every time they wish to put in a fresh roll of film. It is not because the operation is complicated, but because they read without understanding. Several customers of mine never could trust themselves to load their cameras for fear of putting in the film wrong side up or over instead of under the flap in the case of Brownie and Bulls Eye cameras. When it came to loading cartridge roll holders, they were positively helpless. Another case in point is threading the exposed film into the apron for insertion in the developing tank. There are scores of times, in my own experience with customers, when the developed film was only touched on the edges by the developer; another case of lack of thought despite clear and simple directions.

The manufacturers have done their part to help the amateur and to make everything as easy as possible for him to understand. Now it is strictly up to the dealers to co-operate with the manufacturers in demonstrating the simplicity of amateur photography, and, in addition, convincing every individual that he must *think* in order to make a success of it. We have told the amateur for years how simple amateur photography has been made. Then we left him to form his own conclusions with the result that many a good camera found an early resting place in the nearest ash can. Now, we must go further and help the amateur realize the great importance of a clear grasp of the very simplicity of which we are so proud.

There is not a day passes but what the mail contains letters full of questions which a little thought and interest would have answered just as well, if not better, than I could. For example, I have a letter now on file asking for full particulars on how to fit an anastigmat lens to a No. 2 Brownie and what shutter I would recommend to be used for high speed pictures with this anastigmat. The writer of the letter was perfectly sincere, yet even a cursory reading of his instruction book would have shown him the absurdity of his question. There are many letters of really technical questions about lenses which the instruction book covers thoroughly and clearly. Yet, the owners of these cameras and instruction books will write long letters for information they already have at hand. Let me assure the amateur that, after answering more than two hundred letters a month containing questions which are already answered in the majority of instruction books, I feel justified in writing the above paragraphs and in giving a friendly "tip" to each and everyone to *think*.

The old adage, "anything worth doing at all is worth doing well" applies to the practice and enjoyment of amateur photography. Cultivate a spirit of keen interest in everything pertaining to your Brownie, Kodak, Ansco or Graflex, write fewer letters, read more and reason things out for yourself. When you arrive at this point by steady growth and effort, you will agree that you are then getting your money's worth out of amateur photography in knowledge, recreation and the real pleasure of success.





**"BROAD STREET, PHILADELPHIA." SECOND PRIZE, BEGINNERS' COMPETITION
No. 4. WILLIAM B. BRADFORD, PHILADELPHIA**

Action is well delineated and the various attitudes of the figures made to suggest progress. The reflection in the wet sidewalk adds much to the interest of the view.



"A WINTER EVENING," THIRD PRIZE, CAMERA BEGINNERS' COMPETITION No. 4
I. S. LOVEGROVE, PROVIDENCE, R. I.

The topic is well presented, making the view suggestive of the mellow winter illumination of a snowy evening. The light and shade range is considerable and the contrasts pleasing. The architecture is sufficiently varied to give interest, and the technical treatment of the snow is good.

THE OUTDOOR PORTRAIT— C. H. CLAUDY

AMATEURS, perfectly competent to make a successful landscape, attempt outdoor portraiture with hopes high in their breasts and have to run for cover when the results are ready to be shown the, at the time, unsuspecting victim of their "art."

Outdoor portraits suffer from many ills at the hands of those who try, without knowing what they try for, but not the least of the crimes committed on obliging sitters or "standers," is that of rendering them putty or dough for faces, instead of flesh and blood. When one adds to this a black band of shadow on a face, from a hat brim, a triangle of Stygian darkness from a nose, and some holes-in-a-blanket for eyes, it is not a matter for wonder that the subject of the alleged portrait throws up her hands in horror and flees the presence of the unlucky photographer as from a pestilence.

"Oh, I know how to avoid such things," says the beginner, triumphantly. "You mustn't make portraits in the sun. Put your sitters in the shade and you won't get any of those heavy shadows."

Very true. You won't. But you will get a face as flat as a pancake stepped on by an elephant, without modeling or relief of any kind and with a pasty monotone of complexion that makes the pretty girl an invalid and the healthy man a hypochondriac! There is an answer, but it isn't as simple as transferring subject from sunlight to shade.

Moreover, sunlight is not infrequently the great charm of the outdoor portrait. Efforts to make good outdoor portraits, which eliminate sunlight entirely, may be successful. But those outdoor portraits which, instead of getting rid of the sunlight, aim to control its use, are often far more successful.

Now, light is, when it comes from the sun, not controllable at its source. It must be controlled by a process of screening and reflection, and this is a truism whether the portrait be in the front yard, under the porch roof or in the most elaborate studio ever constructed. Hence, the outdoor portraitist must make up his mind in the beginning that he must take enough trouble either to hunt a spot where the light is naturally controlled, or else with screens of one sort or another, to control it. There is no other way—the outdoor portrait made successfully without trouble is always either an accident or a miracle, and this story is of neither.

But there are more ways of killing a cat besides choking it to death with brick dust, and there are more ways of curtaining a light than hanging cheese-cloth around on trees and bushes. And one of the ways is a lady's lace hat. A mere man cannot be expected to know whether large brimmed hats of thin and gauzy texture are the most stylish for this summer's wear or not; any man, however, knows that you don't have to have the latest style in a hat in order to make a pretty picture. And it is wonderful what one of these tissue-like brims on a big hat can do in light control. You can put your young lady sitter out in the sun and have her figure and surroundings flooded with light, and still,

by a judicious manipulation of the camera position and an equally judicious arrangement of the position of the fair sitter's head, have her hat so screen and control the light on her face that a very pretty modeling results. I recall one such effort I saw at an exhibition in which the lady was sitting in a swing, facing the camera. The sunlight was coming from almost directly behind the sitter and ordinarily the result would have been a face so black as to be almost in silhouette. But the very wide and lacy hat brim, acting as both screen and reflector, so softly illuminated the face, that the modeling, while quite different from what could be obtained under a skylight, was most pleasing. The sitter wore a blue dress, which took white, and the sunlight, streaming over her shoulders, gave an almost Rembrandt effect to the figure. In conjunction with a pretty background of grape arbor and vines, the whole was most effective and delightful.

Not always, of course, will your sitters be girls, and if girls, not all will have the right kind of a hat to be used as a part of your photographic equipment. Hence it will come as no surprise to learn that cheesecloth outdoors can perform the same functions as indoors, and that the softening of light from the sky, when under it, presents no problems of greater magnitude than when within and with a window as a light source. Nor should the reflector be



"PEACEFUL NATURE." SECOND HONORABLE MENTION IN THE CAMERA COMPETITION No. 203. CLARENCE TORNES, CANTON, OHIO

The centre of the view is the most effective part of the subject and it is well associated with the beautiful clump of trees to the right. The reflection is also effective. The only feature we do not like is the mass to the left, which is somewhat confused and monotonous. A little more distinctness here would have made this otherwise pleasing subject, an admirable picture.



**"THE HUSBANDMAN." FIRST HONORABLE MENTION, AMATEUR CLASS,
PHOTOGRAPHIC DEALERS' CONVENTION. A. F. SNYDER, UTICA, N. Y.**



"THE FAGOT BEARER, SWITZERLAND." W. T. HIGBEE. CLEVELAND, OHIO

omitted. There is just as much need to soften a too-strong shadow-side outdoors as in, and a pillow case or sheet on a chair can play as effective a part on the lawn as in the library.

"But," argues the amateur, "I don't always make outdoor home portraits at home. Sometimes I am out in the woods or fields, or other places where cheese-cloth and sheets are not available. What shall I do then?"

The answer is, "use your ingenuity" and remember that a portrait which isn't a good piece of photographic work isn't worth making.

If light conditions are such, if surroundings are such, that the only picture you can make is with a face in full sunlight or in full shadow and neither pleases you—don't make it! Make something else. It is no part of a proper pride in one's skill to want to say one can make any picture, anywhere, at any time, regardless of conditions. But not infrequently some thought and pains will take the place of accessories which are at home.

For instance, I watched a clever young chap of my acquaintance make an outdoor portrait at high noon in the country. All experienced photographers know that noon gives the harshest light and that being directly overhead, the sun casts the smallest shadows, and the worst—from a facial standpoint—of any time of day.

The photographer in question had a young girl for a sitter who wore a hat with a wide opaque brim. The only way to light her face under that hat brim, in the surroundings he wished to use for a background, was apparently to ask her to look for an aeroplane or lie down on her back and stare at the sky. Neither appealed as being pretty poses. So the photographer led his sitter to



"NOVEMBER LANDSCAPE." FIRST HONORABLE MENTION IN THE CAMERA COMPETITION No. 203. LAWRENCE BAKER, MARIETTA, OHIO

A good piece of composition with the masses properly distributed to give good effect. The interest in the masses is well considered by having the smaller mass more attractive as it should be in such a subject. The winding road is excellent and carries the eye right into the far-off distance, which is in the proper degree of suppression of tone to suggest depth and atmosphere. The modulation of the sky is good and the horizon properly taken.

the stream which flowed through the open fields, and had her stoop down on a rock and dabble her fingers in the water. By making use of what slight angle of sun's rays there were, he managed to get a negative in which the apparently shaded face was very softly lighted by reflection of the sunlight upwards from the sparkling water. The result was all that could be wished for in soft modeling, and combined the charm of the simple and unexpected with the delights of having done a difficult job in a natural and clever way.

One of the temptations, which besets the amateur in outdoor portrait making, is to attempt to lend interest to his portraits by posing his sitters in strange ways and with odd relations to surrounding objects. He has an uncanny affinity for a pair of trees which grow close together and between which he loves, apparently better than anything else, to pose his sweetheart. If she can peek about the bole of one tree and lean against the other, he apparently feels that he has reached the zenith of beauty to be obtained in an outdoor portrait. An opening in leafy fernery or in trailing vines makes an irresistible appeal, and, regardless of matters of light and shade and direction of the light, he straightway poses his subject and blazes away.

Now, without in any way decrying the informality and the consequent attractiveness of portraits made in natural frames, it is submitted that the frame is not, after all, the most important thing—that a portrait must invariably be a failure if it be not a good picture of the subject and show him or her in some attractive and wholly natural guise. To attend to the details of frame and surroundings first, and consider the matter of light and its control last, is to put the cart before the horse and to arrive—nowhere.

Nothing in this should be construed as an argument against posing a subject in outdoor surroundings, which are particularly germane to that particular portrait. If a girl be normally engaged in doing dairy work, then with sleeves rolled up and a milk pail in each hand and a cow in the middle distance, she should make at least a natural portrait. If a man be fond of his garden and if in overalls and jimmy pipe, spade in hand, he looks more particularly like himself than in any other guise and locality, then such, and only such are the very best surroundings for his outdoor portrait. But to search for the odd, the unusual, the different background or surrounding merely for the sake of being odd, different or unusual, is surely the last and the worst way to go about making the outdoor home portrait.

A last caution and I am done. No attempt should be made outdoors to simulate the lightings or the dynamic effects possible indoors or in the studio. Not that it cannot be done, for it can, with pains and labor, cheesecloth and frames, reflectors and knowledge. But there is no reason to attempt such imitation. The studio portrait, the indoor portrait, have beauties and charms all their own. So has the outdoor portrait, the simple, unconventional and undramatic pose in normal, natural, wholesome outdoor surroundings. Make your lighting simple, but with good modeling, avoid confusion and too much inclusion of extraneous objects which tend to confuse the picture; strive for ease and naturalness in your outdoor portraiture.



"A POOR LITTLE BELGIAN." R. C. NELSON, HASTINGS, NEB.



"VIOLET ROMER." EDWARD H. WESTON, TROPICO, CALIF.

RIVER SCENES

But if we would curb our enthusiasm and search only for pictorial incidents, that make an appeal through their shape and design, we would be much more successful in most cases, and they would tell the story just as well as a more elaborate effort.

"UP THE HUDSON." DONALD C. FITTS

It was taken with a No. 3 Special Kodak, $f6.3$, Zeiss-Kodak lens on a windy afternoon in November. The other Hudson River scene was made with a 4 x 5 Graflex, 9 inch Verito lens, $f4$ on an August noon.

The effect of the latter is more diffused, there is less detail, except in the immediate foreground. A cloudy day and the early morning or afternoon hours are more favorable for clear definition. And this is more desirable, as the impression most of us city folks receive from a river scene near a big city is one of animation, of breeziness and briskness, rather than of haziness and lassitude.

The snapshot was taken from a pier, and the introduction of the poles of the ferry landing was fortunate insofar as it breaks the monotony of the water. The light plane was in need of more than the rather shapeless form of the barge. Even the little row-boat has its merits as a connecting link between the two larger shapes, and it teaches the valuable lesson that there is no reason that we should ever be afraid of unusual shapes that are not beautiful in themselves. They will become pictorial as soon as they are brought into *right relation with each other*.

A straight horizon line that does not run horizontally across the picture area, although true to nature, is slightly offensive to the eye. It destroys the balance. Of course, this can easily be remedied by trimming, and in the enlargement we see how the photographer adjusted this shortcoming, and how the print assumed a more agreeable appearance by eliminating the defects of the film to the left, and cutting away a good part of the sky, and thereby bringing the skyline nearer to the upper margin.



"HUDSON RIVER." DONALD C. FITTS



See Cover Design

"VIOLET ROMER." © EDWARD H. WESTON, TROPICO, CALIF.



"ENRICA." EDWARD H. WESTON, TROPICO, CALIF.

SPOTTING OUT BLEMISHES ON NEGATIVES

THE term "spotting" is applied to the taking out of spots in the negative or else to such an alteration of them as shall make it easy to hide them in the prints. Do what we can, our negatives occasionally will show blemishes in the form of transparent spots, and before making a finished print, such spots should be dealt with. Sometimes instead of transparent we meet with opaque spots. These will appear white in the print; and it is usually, but not invariably, found best to leave them alone, relying on spotting the print to make them invisible.

Small transparent spots, or large ones either for that matter, are blocked up with pigment applied to the film of the negative. By "film" is meant the side bearing the picture, not the celluloid film or glass side, which is always spoken of as the "back" of the negative.

The materials required for spotting are nothing more than a little water color and a fine brush. Special "spotting colors" are supplied. These are chosen so that they can be used for spotting prints as well as negatives, the colors being mixed to match the prints; but they are not a necessity for negative spotting; Indian ink, lamp black, sepia, or, indeed, any water color which gives an opaque spot will serve.

In work on a negative, it is not usual to attempt to make the spot match its surroundings, so that it will not show in the print. At least, that is only done by the expert spotter. The amateur who does not have much spotting to do will find that his easiest course is to make the spot quite opaque, so that it prints white; and then to tone it down on each print until it is no longer visible. Spotting carried out on these lines calls for no skill, but good eyesight, a steady hand, and patience, if the spots are numerous.

It ought to be pointed out at the start that it does not follow that because there are pinholes very visible in the negative, they will also be conspicuous in the print. If the holes are very small indeed, and the print is not made on a glossy paper, they may not show in it at all. Even if the paper is glossy, we can cause the holes to be invisible by putting a piece of clean thin celluloid between the negative and the printing paper. This will very slightly blur the image, not enough to be objectionable, or even noticeable, but enough to make fine pinholes quite invisible. A piece of roll film with its gelatine coating cleaned off does very well for such a purpose, or thin sheets of celluloid can be bought.

A print should be made before starting to do any very elaborate spotting, to see whether it is really needed. If the pinholes come in parts which are more or less irregular in character, as, for example, in the image of a mass of trees, or weather-worn masonry, one may take it for granted that they will not be perceptible. It is when they come on a smooth even surface of light tone that spotting is most necessary, or when they fall where the image is likely to be closely scrutinized, as, for example, on a face.

Spotting is done on the negative after drying, and the pigment is put on the film side. Although a spot here and there can be filled up by putting the negative on the window sash, so that the sky can be seen through it, and the precise position in which to put the tip of the brush is plainly visible, it is a great help to have the negative in such a position that we do not have to look up at it, and so that the arms have some support. Retouching is usually done with the negative sloping, it is true, but not very much; for spotting it may be much nearer the horizontal. The ordinary slope given to a writing desk is convenient, and one may arrange a printing frame, or a board with a hole in it of the suitable size to take the negative, at about that angle. Underneath is placed a piece of white paper, so that light is reflected up through the negative.

Anyone starting out to block up a little hole with water color is almost sure to fail at first, unless warned in time against having the brush too wet. The tips of its hairs should be moistened and then rubbed on the color until enough has been taken up; but the quantity required is a very small quantity indeed, and must be quite thick, so that there is no chance of it running. If the brush is too wet, the spot will be made needlessly large, or it may dry as a ring with a clear spot in the center, a phenomenon by no means rare in early attempts at spotting.

If there is any doubt about the condition of the hairs, the brush should be held almost flat upon a piece of paper, and then drawn along in the direction in which the handle is pointing, while it is gently "twizzled" on the paper, until it almost ceases to leave a mark. Just before this point is reached, the brush will be in the right condition. It is touched on the spot and lifted again at once. There must be no broadside or painting action; the motion should be the same as would be given if the film were to be pricked with a pin.

Should the spot be due to the gelatine itself having been removed, it will not do to apply pigment in this way, as there will be no film to hold it, and water color does not take nicely on glass or celluloid. In such a case, a spot of clean gelatine must be put down first. A scrap of gelatine may be soaked in water until quite soft, and then put into a cup which has held boiling water for a minute or two. The heat will liquefy the gelatine, a drop of which may then be taken up and put on the negative. A piece of glass rod drawn out to a blunt point is convenient, but a pointed stick will do. It is best to put whatever is used into very hot water for a moment or two, or the drop will congeal on its way to the negative.

When the spot of gelatine is quite dry it may be worked over with a little water color in the way just described. It is seldom that gelatine will be necessary, as the great majority of so-called "pinholes" are not in reality holes at all. They are places on the film where the gelatine is still continuous, but where there is no image. They are caused by dust at the time of exposure, air bells during development, or some chemical action (generally due to dust) afterward.

If instead of a pinhole there is a scratch, it may be dealt with in a very



"RAE." EDWARD H. WESTON, TROPICO, CALIF.



"ENRICA." EDWARD H. WESTON, TROPICO, CALIF.

similar way; but a scratch calls for more care, because from its definite form there is more chance of the work done on it being visible. We must be careful in blocking it up not to make the white streak which it will leave on the print any wider than can be helped, or the difficulty of filling in such a space on the prints will be increased.

It is best not to attempt to draw a line on the film to fill up a scratch; but to fill up in a series of spots done exactly as would be done for a small pinhole. The spots should be quite distinct, and after allowing a few moments to elapse for the pigment to dry—so little should be used that it should dry almost as soon as it is applied—a second intermediate series of spots may be made, and so on until the scratch is filled up. This is much more likely to hide it than a line would be.

Although the method which is most suitable for a beginner is to block up all spots so that they print white and then to tone them down into invisibility on the prints, there are circumstances in which it is preferable to make a black spot on the negative print out dark. In this case, the usual plan is to pare down the film itself with a sharp knife. Special knives of lancet form are made for this purpose, and for the finer work they are almost a necessity; but it is possible that the requirements of the amateur can be fully met with the small blade of a pocketknife, provided this is given as keen an edge as a hone and strop can furnish.

I do not advocate attempting anything elaborate in the way of knife work on a negative. It calls for much more skill than spotting, and, unlike spotting, it is final. A wrong stroke cannot be washed off and a fresh start made. But a little practice on negatives that do not matter will soon show how far it is safe to apply it to negatives that do. There is a little knack about it, mainly in holding the knife so that its cutting edge just shaves off the thinnest possible film of gelatine, the finger tips resting on the film and acting as a guide to the blade. The knife should be held close to its point.

When a comparatively large area of the negative is to be made to print darker it is best done by rubbing down. If we take a little ball of cotton wool, put a few drops of methylated spirit on it, and squeeze it very nearly dry, it will be found on rubbing it steadily on the film of a negative that the spirit has given it a kind of tooth, so that it gradually removes some of the film, the wool itself being blackened by the silver of the image which is being rubbed off. There need be no fear of injuring the film, provided the finger nails or any hard object do not touch it; one can go on steadily rubbing until an opaque part is nearly transparent.

If at first the cotton wool does not seem to have any effect on the image, it is because it is too wet. It should be used almost dry; so little spirit being needed, in fact, that it is hardly ever necessary to re-wet it, however long one may have to continue the rubbing. The rubbing should be done in a circular fashion, shifting the circle slightly each time, so that the action is not too local. This method has been described often enough, so that this mention of it must suffice. It is very helpful and quite easy.

The processes which have been described above are those which are most in use by photographers, and constitute the simpler parts of the general subject of retouching.

The particular term "retouching" is generally applied to a more or less elaborate application of pencil work to the negative; and although there are amateurs who practice it, it is a little beyond the powers of the beginner, even if it were desirable. Many do not care for its results, and there are objections to it on the ground that it is not "pure photography." This might be alleged against the operations just mentioned, but little exception can be taken to just enough spotting to cover blemishes which have originated in carrying out the work. The retouching out of blemishes in the subject is another matter.

Such spotting as has here been mentioned is easily done; but, all the same, it is best to try and avoid any necessity for it as much as possible. Some of the causes of spots have been enumerated above, so that the photographer can be on his guard against them.—*Photography and Focus.*



"ALPINE ROAD, SWITZERLAND." W. T. HIGBEE, CLEVELAND, OHIO



"TED SHAWN." EDWARD H. WESTON, TROPICO, CALIF.



"MAUD ALLAN." EDWARD H. WESTON, TROPICO, CALIF.

PAPERS FOR BEGINNERS

THE analogy of the lens and a glass prism was touched upon in a former paper. Now let us see what happens to a ray of sunlight which is made to pass through a triangular prism of glass. We will isolate the ray by allowing the sunlight to enter through an opening in a closed shutter, and to fall upon the opposite white wall.

After passing through the prism, however, we notice a different phenomenon. The beam is no longer straight, but is spread out to considerable extent after emerging. We see it developed into a number of different colored fringes. If the point of the prism is downward, we have for the lowest fringe a band of red which gradually shades into an orange band, and this orange into a yellow and the yellow into green, then follows the blue, indigo, violet. There are rays on both ends, which, however, are invisible to ordinary vision, which have action, but we cannot consider these just at present. One thing we should notice is, that while each of these components of the white ray of light is bent by the prism out of its course, there is a difference in the degree of the bending. Some of the components are bent considerably more than the others. The red is least bent or refracted; the blue, indigo and the violet most of all. Hence, we say the red end of the spectrum, as this spreading out of the ray is called, is the least refrangible and the violet end most refrangible.

Sir Isaac Newton was the discoverer of this peculiarity of a ray of light when it is decomposed by the prism. He divided the spectrum into seven primary colors, which were patent to the eye. But his views have been greatly modified, and the general prevailing opinion is that there are but three primaries. Interesting as this part of the subject is, we must refrain from going further into it. We have merely touched upon the topic of the decomposition of light, because some information about it is necessary to the understanding of what is called the chromatic aberration of the lens.

No single lens, that is, a lens made of one kind of glass throughout, can possibly bring all the colors of the ray of light passing through it to the same focus or common point; because, as we have shown, the colored components are not equally refracted, and consequently the image formed by such a lens would have a fringe of light of various colors about it. The violet rays are brought to a focus nearer the lens because they are of the greater refrangibility; the red rays much further away, because in their passage they are not so much turned from their path. So really on our ground-glass we have a picture caused by the overlapping of these rays which cannot, therefore, be a sharp and well defined image because the foci of the colors are so different. They do not coincide, as it is said.

The picture we see upon our ground-glass is made visible to us by the preponderance of the yellow rays, because these rays, properly speaking, are the illuminating rays. The blue and violet rays are not particularly illuminating, but unfortunately for photography they are far more active upon the sensitive film than the yellow.

To make a compensation we must devise some way to make the blue rays and the yellow come as near as mechanically possible to the same focus. That is, the lens must be corrected for chromatic aberration.

This was effected by forming a combination of lenses of different dispersive powers. The aberration of one element of the lens balancing the aberration of the other. It was found out by Dollard, an English optician, that if one part of the lens is made of flint glass and the other part of crown glass, and proper curves given to the two components, a correction is effected, and thus the visual and the chemical foci are made coincident.

The earliest form of a landscape achromatic lens used for photography, consisted of a bi-convex lens of crown glass cemented to a bi-concave flint. The Grubb lens, which is interesting as being the first so-called aplanatic lens, was formed by cementing a concavo-convex flint to a meniscus crown. It was found to work with a larger aperture and with less distortion, but of course was not as correct in this particular, as more recent lenses of the aplanatic form, which are not single corrected lenses, but compound ones. This subject of distortion will need another chapter to make it clear to you.

TALKS ON COMPOSITION— SADAKICHI HARTMANN

SOME INDIVIDUAL FORMS OF LANDSCAPE COMPOSITION

COROT, the famous French artist, has perhaps invented more new formulæ of composition than any modern landscape painter. They have become classic by this time. Landscape as practiced by the Dutch and Italian painters was largely scenic; in Corot it is more intimate. It is the mood that tells.

As idyllic as his scenes may be, they convey the genuine realistic charm of nature, but it would be difficult to reduce them to any distinct underlying geometrical shape. They are too willful and versatile for that. Yet they have generally one characteristic in common. They show the juxtaposition of a large, dark mass with an interesting outline, mostly tree-shapes, against the sky and the rest of the scenery, as in Fig. 1. A smaller dark mass is used as balance. In Fig. 1, these shapes are quite distinct and clearly outlined.

In Fig. 2, the same principle prevails, but the underlying form through the light shimmering through the foliage is less palpable. The shape is very large in size and had to be broken up. The forms of the tree-trunks and branches thereby become more prominent, and as line-forms need line-forms for balance, the tree-shape with the figures was introduced.

Corot in the treatment of his masses is never flat-toned. On the contrary, they are full of detail, light and shade, and vibration. And they nearly always contain some light spots, cut out as it were, where the lighter tints shine through. This is best exemplified in Fig. 1.

So the formula of composition amounts to this: the selection of one large



FIG. 1

dark shape that dominates the picture-area balanced by a smaller one, and their pictorial value as a mass and agreeable outline seen against a light distance with more or less detail. It is contrast that produces the effect, the sensation that dark shapes on a light background produce upon the eye. In Fig. 1, the lighter tints occupy almost as much space as the darker ones, and for



FIG. 2

that reason the division and effect of contrast are felt more keenly. In Fig. 2, everything is more subdued and subtler. The darker mass is broken up, but the lighter part extends over less than one third of the picture area. Peculiar to Corot's compositions is the low foreground line as seen in Fig. 2. He frequently dispensed with middle distance and made his compositions solely with a strip of soil, tree-shapes and a hazy distance. But he never fell into the error of a mere silhouette effect, which easily might be the result.

In Fig. 2, there is plenty of middle distance, but the foreground also in this instance is very low. This permits of the introduction and building up of larger dark shapes. The ground is naturally light as it represents in most cases nothing but sunlit water, a vague distance, and a sky without clouds.



"SUNSHINE," W. R. BRADFORD, PHILADELPHIA

WAS THE EXPOSURE CORRECT?

DID the negative receive correct exposure?

To many who examine a negative this is a perplexing question, yet it can be readily answered if the negative was correctly developed. If the negative was developed in an Eastman tank, exactly according to the instructions furnished with the tank, it was correctly developed.

The gradations of light and shade seen in negatives and prints are broadly divided into three classes, known as high-lights, half-tones and shadows.

The high-lights are the lightest parts of a print; they are the darkest parts of a negative.

The shadows are the darkest parts of a print and the lightest parts of a negative.

The half-tones, in a print, are lighter than the shadows and darker than the high-lights. In a negative they are darker than the shadows but lighter than the high-lights. They are the middle tones that appear gray in a black and white print.

A correctly exposed negative shows detail (gradations of light and shade) in the half-tones, in all but the strongest high-lights and in all but the deepest shadows. In a correctly exposed negative, the contrast between the tones is correct. Such a negative will make a good print on either Regular or Special Velox. The print on Regular Velox will be snappy and brilliant, while the print on Special Velox will be soft and delicate.

An under-exposed negative has no detail in the shadows. A badly under-exposed negative has no detail in either shadows or half-tones. In all under-exposed negatives the contrast between the tones is too great. A *slightly* under-exposed negative will usually make a pleasing print on Regular Velox. A badly under-exposed negative will not make a good print on any kind of paper.

An over-exposed negative has an excess of detail in the shadows, with too



OVER-EXPOSED NEGATIVE



CORRECTLY EXPOSED NEGATIVE

little contrast between the tones. Unless the over-exposure is extreme (30 or more times the correct exposure), such a negative will, however, make a pleasing print on Regular Velox.

From this it will be seen that the amateur photographer can readily determine whether his *correctly developed* negatives were correctly exposed, under-exposed or over-exposed. This will teach him how to make good negatives.

Unless the negatives are correctly developed, none but an expert can, in all cases, determine whether the exposures were or were not correct.

Our illustrations represent the three classes of negatives we have described. They were all made on the same roll of film. This roll was developed in the Kodak Film Tank, with Kodak Film Tank Developing Powders, at a temperature of 65 degrees; they were, consequently, correctly developed.



UNDER-EXPOSED NEGATIVE

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

NO ADVANCE IN PRICE

MANY magazine publishers are advising us that on and after a certain date the price of their magazines will be advanced from 20 to 50 per cent. The cause, naturally, is the increased cost in paper, ink, engraving and other materials that go to make a magazine.

THE CAMERA has a supply of both paper and ink in its own warehouse that will provide for the next fifteen months, consequently there will be *neither an increase in price* nor a deterioration in quality. We have set a standard and will maintain it.

AN ARTIST-PHOTOGRAPHER

OUR cover design for this month has been selected from the work of Mr. Edward H. Weston, of Tropico, California. We have picked out this particular subject, not merely for the exhibition of its admirable features, but more particularly for another quality which his work possesses and which is essential to all art, but here specially emphasized—that is, decorative effect. The motive being of less consideration in the scheme of the picture than the general impression it produces by artistic management of the masses of light and shade and the adroit association of pleasing lines, so that the space allotted the design has all things in harmonious relation gratifying to the eye and appealing to the delight the mind has for symmetry and grace, a kindred effect to that by beautiful rhythm and verbal melody in poetry.

The striking feature in Mr. Weston's work is its originality. His schemes of illumination are unusual, but no attempt is made for effect by any sensational exhibit. Everything is in accord with Nature's way in the distribution of light and shade, and hence, though unexpected, always pleasing because always natural.

The novelty of the presentation is further heightened by the skill displayed in the association of the subject with the surroundings. The accessories are adapted to the motive of the picture. They are few and simple, and act

supplementary to interpret the scheme presented and never divorce the attention from the essential topic. The unity of the picture is thus preserved and the main impression emphasized, while at the same time it is kept in perfect harmony and relation with the other parts of the picture, which act as a support to it. The space relations are also well considered to make the portrait head or figure fit properly into the dimensions assigned it. The balance of lines is well preserved, and the association of the masses of light and shade so managed as to give a pleasing, artistic, but not too pronounced, relief.

Altogether, Mr. Weston's work has the charm which an admirably painted portrait possesses, and his examples make a valuable object lesson of the application of high art principles to photography, and demonstrate the fact that technical skill and legitimate work by the camera may be intimately associated with the best art of the painter to make something beautiful and, withal, true.

Mr. Weston will demonstrate at the National Convention at Cleveland, and every progressive photographer is sinning against his light if he fails to avail himself of this valuable opportunity of learning how such beautiful results as these are secured.

REGARDING OUR COMPETITIONS

ON several occasions we have awarded prizes in our monthly competitions, and found, after the awards had been made and paid for, that the contestant had been a winner of prizes in other competitions for the same picture. This destroys the purpose of our contests, and it does not seem fair to others who enter prints in good faith.

We have been compelled to adopt the following new rule: *Prints that have won prizes, or are entered in other contests at the time of entry in this competition, are not eligible.*

Twice this year prizes were won by contestants entering other photographic magazine competitions. One prize we withheld from Mr. Milton M. Bitter, as his print appeared in another publication as a prize winner, and it was too late for us to hold back the printing of his picture. In May we had a similar case with the award to Charles P. Abs. Mr. Abs' picture had been printed and the prize sent to him immediately upon making the awards and before we were aware that it had won a similar prize in another publication. Naturally, this would have been held back had we known.

However, as a matter of justice to Mr. Bitter, we have awarded him the amount of his original prize. It is to be regretted that he was the unfortunate one, as the matter did not place him in a favorable position.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1281. *A. M. Kapick.*—"Interesting Hour." A picture can only exhibit a moment of time, and so it is impossible to express the interest of an hour. As a picture, however, your photograph fails. You seem to have gone out of the way to get a studied unpleasant regularity. The figures are posed in an inanimate stilted way, are apparently taking no interest in what they are doing, perpendicular and stiff as sentinels. The chairs are made to give a perfect equipoise, the table being directly in the center between the chairs. The dark clothes of the boy contrast with the white garment of the girl. The triangular white table cover repeats itself by the unnecessary napkin below.

1282. *Robert H. Kraeger.*—"Summer Time." A pleasing idyllic subject, suggestive of summer atmosphere. The grouping of

the cattle is natural and pleasing. They add much to the interest of the composition. The foreground is excellently managed and well supports the rest of the picture. We



No. 1285. *Data.*—9 x 12 cm. Speedo Gaumont; Goerz lens; $f/14$; July; 1-150th second exposure; Eastman bromide print.

think the tree—pleasing as it is—is a little too high. The upper portion of the foliage is its least interesting feature and not photographically good; cut off one inch from the top.

1283. *Charles F. Stone.*—"Portrait." Pose of the head good, that is, the head is fitted to the shoulders in an easy and unconstrained manner. The lighting could be much improved. It is, first of all, too flat and uniform, and all of one tone. No nice modulated shadow, no clean line of light along the nose, and no clearness of the eyes. There was no necessity for the hollow in the cheek. The mass of undifferentiated neck drapery is unpleasant and gives too much contrast. The book is too large and too attractive to the vision, divorcing the attention from the main topic, the face. The background is too dark and there is an unpleasant unnecessary regular mass of black directly behind the head.

1284. *W. C. Dance.*—"Easter Flowers." The figure advertises, too plainly, constraint. There is no spontaneousness in the pose. The model is not in the least interested in the flowers, but more in the success of the portrait. Had the figure been placed somewhat behind the plant and in a stooping position to suggest association with the flowers, the



No. 1282. *Data.*—5 x 7 Korona series IV; Voltas universal focus lens; $f/16$; July 12.30 P. M., hazy light; 1-5 second exposure; metol hydroquinone developer; Noko normal print.

result would have been much more pleasing. The subject, too, is somewhat undertimed.

1285. *Leon Maurice*.—"Touring the Alps." The landscape setting is attractive, but in our opinion the car is not in the proper position to add to the artistic features of the view. It is too large proportionally and has not sufficient leeway. The foreground is curtailed inordinately and the machine has the appearance of being constrained for space. It would have looked more natural and the pictorial effect would have been better secured by having the car represented somewhat further in the scene so as to make it an initial part.



No. 1287. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Burke & James Ingento; R. R. lens; March 1.30 P. M., bright light; $1\frac{1}{2}$ minutes exposure; M. Q. developer; Azo print.

1286. *Henri Millon*.—"It Never Rains But It Pours." For a beginner, the work is very creditable. Your ideas are good and the subject has pictorial value. The management of the figures suggests movement, which is what is necessary to such a subject. The photography could be improved some; it is too hard. A softer effect is more pleasing where the parts blend into each other less abruptly.

1287. *Henry Wagner*.—"Portrait of a Lady." The lighting is entirely too flat and monotonous. There are no gradations and



No. 1290. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Seneca; anastigmat lens; $f/16$; September 10 A. M., bright light; 1-5th second exposure; M. Q. developer; Cyko normal print.

the tone of the face and neck is of equal value with that of the drapery. The direction of the eyes is poorly chosen. It causes the face to stare. The background is too attractive and too much like the drapery of the figure.

1288. *R. S. Tanaka*.—"Sunrise." We would hardly call this a sunrise effect, though doubtlessly it was taken when the sun was rising. "Eventide" would be a more appropriate title. The general effect, however, is too sombre for either phenomenon. It is more like a moonlight. You see from this that we have no special liking for such subjects with the camera. Natural things are too much falsified.

1289. *Earl Wise*.—"Indian Creek." A pleasing composition. The bare trunks and entanglement of leafless limbs are nicely managed, and the rendition of the snow and the frozen stream, pictorial. There is also suggestion of atmospheric effect which adds to the other good features of your picture.

1290. *L. L. Bilisoly*.—"The Creek." The view is too much extended toward the left. This part is not particularly interesting in itself and does not associate well with the more pleasing portion to the right. It makes the balance too even. You might improve the picture by a line drawn through the centre and excluding all to the left of it.



No. 1300. *Data*.— 5×7 Eastman view; Turner-Reich lens; $f/32$; March 2 P. M., $\frac{1}{2}$ second exposure; Cramer pyro-soda developer; normal Cyko print.

1291. *Ford E. Samuel*.—"Distance lends Enchantment." The general effect is pleasing and the figure well placed. The distance and half distance are well brought out. A little more suggestion of atmosphere would improve the view and a less wiry presentation of the tree to the right would give a softer effect.

1292. *John S. Folk*.—"Creek Bank." A pleasing panel picture and a good composition. A nice balance of parts and a suggestive glimpse through the trees. The various lines of the trees make a good combination with a variety of pleasing curves.

1293. *A. T. Pack*.—"The City." A good treatment of an ordinary subject animated with interesting features. The architectural part is particularly good. It needs just about one-half inch cut off from the lower part—the foreground being a little too extended. This cutting would remove some of the out-of-focus snow and keep the pictorial parts in better relation.

1294. *Joseph A. Sayles*.—"Across the Bay." Neither the water nor the shore is correctly presented. The view is divided almost equally in two parts by having the



No. 1293. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ 3A Folding Brownie; R. R. lens; f16; March 11.30 A. M., dull light; 1-25th second exposure; Ansco developer; Cyko print.



No. 1295. *Data*.—4 x 5 Cycle Poco; R. R. rear combination lens; f22; August 9 A. M., bright sunlight; D. Q. developer; Artura Iris grade C print.

horizon line directly at the middle. A horizon should never be so placed. The photograph is also considerably undertimed.

1295. *Chas. D. Meserve*.—"In the Summer Time." A pleasing child study, but the figure is too large for the limited space allotted it. More of the shore should have been included, and if possible, you should have gotten a glimpse of the sea. At least, you might have given the little one some space in front. She is dangerously near the lower margin.

1296. *G. Carlie*.—"Preparedness." A timely subject of topical interest and effectively rendered. The attitude of the men is natural and suggestive of action. The landscape setting is also good and appropriate to the motive. An improvement might be effected by a little trimming at the lower margin. It would balance the view better and also exclude the part out of focus.

1297. *S. W. Singer*.—"Columns." The quality is good, and the perspective well managed, but the effect is marred by too little presentation of the structure. More of the vaulted parts should have been shown and particularly the interesting arches. There is a lack of balance in the picture, and architectural subjects, particularly, demand this—to give suggestion of stability.

1298. *W. I. Stevens*.—"The Winter Blanket." A pleasing winter landscape and a nice range of light and shade gradation in a low key, suitable for such a subject. The shadows are particularly pleasing, and the dark shades of about the proper intensity, that is, contrast is properly controlled and the different textures of snow and tree trunks are nicely considered.



No. 1298. *Data*.—4 x 5 Conley; R. R. lens; U. S. 8; March 3.30 P. M., bright light; 1-25th second exposure; pyro developer; professional Cyko print.

1299. *F. W. Robinson*.—"Just Before the Storm." We think you might have selected a more suitable association than the uninteresting railway to picture the on-coming storm. It affords you no means of showing the effect of the phenomenon. What is there attractive anyhow in a great waste of track and siding? We want pictures by photography—not records.

1300. *Albert Garinger*.—"Connecticut." The size of the cottage is too great for the space allotted the view, and the foreground too curtailed. The subject looks crowded. The lighting is not effective—too flat and uniform. One side of the house should have been shown in shadow, so as to give it some relief. The texture of the snow is, however, properly exhibited.

1301. *Claude V. Deming*.—"Auto Square." There is a possibility of arranging even such prosaic subjects as automobiles so as to get some pictorial effect. It would seem that any other disposal of them would have been better than the monotonous straight-in-a-line way you have placed them. This position of the cars may be the best for displaying the commercial value, but it is not pictorial.

1302. *H. E. Moore*.—"Study." Pose of the head good and the lighting scheme well carried out. The background is entirely too intense, and thus gives unnatural relief to the head. It apparently floats in the air. Relief is necessary in a picture, but too much relief gives only a stereoscopic effect, which is unnatural looking.

1303. *N. H. Schammel*.—"Sea Study." General composition good but the illumination is very unpleasing—no separation of planes of picture, no receding of parts, no atmosphere suggested—all one uniformity, sea, sky and shore. The waves are not well represented, no action or swell—mere petrification and arrested movement.

1304. *C. E. Wilkinson*.—"The Travel of the Moon." An unusual photograph and one possessed of much artistic merit. It is suggestive of moonlight phenomena, and more correctly pictures a night view than the fake imitations of the real thing. Your composition is particularly pleasing and the effect of atmosphere is well brought out by the association of the sky with the landscape. The foreground is a little too extended. Cut off just above your signature.

1305. *Jess White*.—"Shady-nook, Babbling-brook." Your composition is good, but the general effect can be improved by a little judicious trimming of the print. The foreground should be cut off from the bottom about half an inch. This gives better balance to the view. The lighting of the landscape might have been more varied. The illumination is a little flat—the distance approaches too much.

1306. *I. S. Lovegrove*.—"Mind Your Signals." Photographic quality excellent, but the subject is not pictorially presented. The



No. 1302. *Data*.—5 x 7 Folding Seneca; Voltas lens; f8; April 9 P. M., electric light; 10 seconds exposure; pyro developer; Cyko glossy print.



No. 1304. *Data*.—Not complete. Time of exposure three-quarters of an hour.

view of the city, unobstructed by the train, together with the rather interesting foreground with the curved tracks, would have made quite a pleasing picture. As it is, the houses look piled upon the train. Had you represented the train approaching the city from the right side (and less of the train) the view would have been not only better balanced but more of a picture.

1307. *J. Douglas Smith*.—"Outdoor Portrait." The technical quality is good but the pose is stiff and unnatural. The figure is squared about too much and the effect is intensified by the unpleasant straight lines of the bench. The boys in the background make a more pleasing subject than your foreground figure.

1308. *C. R. MacCarrick*.—"Outdoor Portrait." The pose is constrained and unnatural. Such a posture is neither comfortable to the sitter nor pleasing to artistic taste. Indeed, in connection with the expression, one would be led to think that the operation was even unpleasant to the model. The whole photograph suggests an uncomfortable feeling. Your photographic work, however, is excellent. Both the flesh tones as well as the drapery are skillfully managed.



No. 1311. *Data*.— $2\frac{1}{2} \times 4\frac{1}{4}$ 1A Kodak; R. R. lens; U. S. 32; September 11 A. M., bright sunlight; $\frac{1}{5}$ second exposure; M. Q. developer; velvet Velox special print.

1309. *L. A. Pease*.—"At Tea." The photograph is too contrasty, merely black and white, no intermediate tones or gradations. The figures look cut out against the intense black background. The negative is underexposed and over-developed. The composition is not well managed. It might be improved by cutting out the baby figure.

1310. *Rev. P. W. Weber*.—"Niagara Falls." A good view of the Falls, showing well its mass and height and giving considerable suggestion of its velocity. The flow of the water indicates movement. The point of view is also well taken.

1311. *A. G. Sherman*.—"Village Street." A pleasing topic for a picture, well considered and with an appreciation of proper space



No. 1307. *Data*.— 5×7 Korona; R. R. lens; $f/8$; July 10 A. M., bright light; 1-25th second exposure; M. Q. tray developer; velvet green Velox print.

relation. The flecked shadows on the roadway make a nice divertissement, and the introduction of the milk wagon to the side gives interest to the subject. The perspective is fine, the distance being well indicated. The photographic quality is also good.

1312. *Orville D. Ellis*.—"Snow View." Woefully undertimed—a mere mass of black and white with no attempt at composition—the figures are inactive and if it were not for the show of the tripod it would be impossible



No. 1308. *Data*.—5 x 7 Conley B. S., Isostigmat lens; $f/5.8$; July 3 P. M., dull light; 1 second exposure; pyro-soda developer; Argo normal print.

to tell what they are attempting to perpetrate.

1313. *J. F. Westerberg*.—"Winter Peace." The composition is not interesting in itself, and hardly concordant with your title. The foreground is bare and monotonous, and gives no photographic indication that it is snow-covered. It might have been marble or concrete for all we can judge from its appearance. The sky is the best feature.

1314. *E. H. Harrington, Jr.*—"Child Study." Photographic quality very good and the illumination pleasing and appropriate to the subject. The background is of proper intensity to give artistic relief to the figure and contrasts properly with the high-lights of the drapery, which are nicely indicated. The flesh values are also good. Altogether a very commendable piece of work.

1315. *G. R. Liska*.—"Dorothy." (Peeved) The figure is well posed and natural—but the surroundings are not particularly interesting or pleasing. The checker-board back of the bench distracts the attention from the main topic, and being of about the same value in tone, makes the light and shade on the little model, who plays the part well, too uniform. You need to show a little more contrast.

1316. *H. Rothwell*.—"Resting." The character of the subject is well exhibited, but the composition is not pleasing. The figure

should have been placed so that the trees could be used as a background. You would thus have avoided the unpleasant angle formed by the fork and the rail fence. The photographic quality is poor, the print is too flat and of one tone.

1317. *J. F. Jackman*.—"Oil Wells." Possessed of general as well as local interest, but of no pictorial quality. Good photography, however.

1318. *Linda E. Cattell*.—"Betty." General effect pleasing and the pose of the figure natural and unconstrained. The illumination might be improved if the shadows had been better connected. The picture, as you present it, loses considerably by bad spacing. The figure is down too much, the head is almost in the center of the card, and thus falsifies the true proportions of the model and takes away from the natural dignity of the subject. By bringing the head more to the top and by cutting away the unpleasant lower part, you will notice how much the change enhances the other good features of your really excellent portrait.

1319. *Meda Weigand*.—"Snow Drift." Interesting as a record of an unusual natural phenomenon, but having no features suitable for criticism from an artistic consideration.



No. 1314. *Data*.—5 x 7 Conley; Conley lens; $f/5$; 2 o'clock; bright light; about $\frac{1}{4}$ second exposure; pyro-soda developer; Azo E hard print.

1320. *James V. Dunham*.—"Home Portrait." There are too many spots of high-lights which come unpleasantly in contrast with the dark shadows. Why did you introduce the unnecessary pocket handkerchief to add to the number? The latter might easily have been suppressed and there is no necessity for the showing of the exaggerated size hand to support the pipe. The area of high-light in a picture should be small and the deepest shadow also should present only a small space. These two extremes should be connected by intermediate gradated tones from high to low.

1321. *Charlton V. Howe*.—"Portrait." Pose and general management of the figure excellent. The head is pleasingly and naturally inclined, and the expression well brought out. To our taste the lighting is a little too uniform. A good character face like this should have a greater range of light and shade to emphasize the particular expression or motive of the picture. The spacing of the figure is well considered by placing the head rather high up. You add to the dignity of the subject and also give proper balance to the picture. The lower part of the photograph ought not to have exhibited the con-



No. 1320. *Data*.—5 x 7 Seneca; R. R. lens; f11; February 3 P. M., good light; 6 seconds exposure; pyrosoda developer; Seltona print.

trast. It needs quietness just here so as not to attract the eye to this part, away from the head, which is the essential feature of the picture.

1322. *R. M. Goho*.—"Home Portrait." Good in pose and general management of the figures, and the lighting rather soft and pleasing, but more of the mother should have been shown. The straight line of the mount cuts unpleasantly against the drapery of the figure. The blank darkness at the lower part is somewhat unpleasantly brought abruptly against the white of the mother's dress and the baby's frock.



No. 1318. *Data*.—3A Folding Buster Brown; R. R. lens; f8; April 3 P. M., fair light; 8 seconds exposure; M. Q. developer; Cyko print.

LIGHT SENSITIVENESS OF SELENIUM

Besides the silver-halogen salts, which are mostly used in photography, there are other well-known sensitive substances. One of the most sensitive of these is selenium, which is already employed in distance photography. According to experiments made by E. E. Fournier d'Albe, reported in *Wiener Mitteilungen*, this metal, under suitable conditions, is far more sensitive than the eye, and even the most sensitive dry plate. So with the most recent selenium-cells light quantities as small as 0.01 milli-microlux can be identified, while the sharpest eye can only distinguish quantities of 3 milli-microlux and over.

LANTERN SLIDES UPON OLD PLATES OR WASTE NEGATIVES

Photographisches-Wochenblatt gives a method for making transparent positives or lantern slides by the utilization of discarded plates and negatives which are no longer of value. When discarded negatives are employed the image must be thoroughly reduced either by use of the Farmer's Reducer (Ferri-cyanide of potassium and hypo) and thoroughly washed or by means of perchloride of iron (ferric-chloride) and citric acid—20 grains ferric-chloride, 40 grains citric acid, water 2 ounces. After application of this reducer if any faint trace of image still persists it may be completely obliterated by placing the plate in hypo. It is then to be thoroughly washed and finally placed in a weak solution of permanganate of potash and rinsed under the tap. The negative being now reduced to a mere film of gelatine, is prepared for the process. Negatives which have been submitted to an alum bath cannot be used.

The sensitizing salt is the well-known ferric-ammonium citrate. This salt is made up in a solution with potassium—ferri-cyanide (red prussiate). The film is impregnated with this combination.

Potassium ferri-cyanide..... 5 drams
Ferric-ammonium citrate..... 6 drams
Water..... 8 ounces

Immerse the plates for two or three minutes, dry in the dark as quickly as possible. Printing is done by contact. Expose until high-lights appear of a decided blue color and the shadows grey. Wash until the high-lights are clear. The color of the image produced is blue.

To get a different tone make up the following:
Ferric-chloride..... 230 grains
Citric acid..... 160 grains
Water..... 20 ounces

Immerse the bleached negative had by the above method in this solution for a few minutes and dry in the dark. Use the bath immediately it is made up. Print until a visible image is produced. Then remove to the following bath for the desired tone:

RED TONE

Fuchsin..... 3 ounces
Gum arabic..... 16 grains
Gelatine..... 230 grains
Water..... 12 ounces

Temperature of bath 75 degrees Fahrenheit, which must be maintained during the plate's immersion. Dry the plate without washing, and when dry give a rinse under the tap.

FOR GREEN TONE

Scheele's Green..... 16 grains
Gum arabic..... 30 grains
Gelatine..... 1 1/4 ounces
Soda solution (10 per cent)..... 20 drops
Water..... 20 ounces

The object of keeping the temperature at 75 degrees, or a little above, is to keep the gelatine from setting. It is therefore advisable to use a hard variety of gelatine, or to harden the sample by means of alcohol.

PYRO FOR GASLIGHT PAPERS

Pyrogallol as a developer bears such a reputation for staining everything it is brought in contact with, that the mere fact of using such a developer for paper prints is much deprecated, but, strange as it may appear to many, pyrogallol can be used quite advantageously for either bromide or gaslight prints, without in any way interfering with the purity of the whites, even when using ammonia as the alkali.

Four or five years ago, when making some large bromoil transfers for photo-lithographic work, the requisite relief for such transfers was difficult to obtain with certainty when using the ordinary developers such as M. Q., etc. Remembering the fact of the noticeable relief on negatives developed with pyro-ammonia, a trial was made on paper with that developer, the result being an enlargement that could not be distinguished from others developed with M. Q., until it was surface-dried, and then the beautiful relief was apparent.

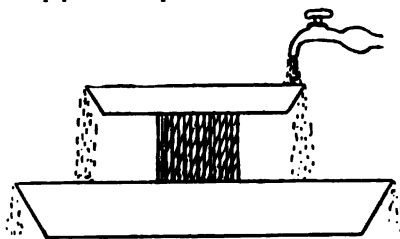
Pyro-ammonia not always being on hand, pyro-soda was tried, with the same results as regards color of image, though the relief was not so high. But the transfers inked up very well indeed; in fact, far better than any prints developed with M. Q., amidol, etc.

All these bromoils were fairly large—20 x 30 to 40 x 60. For many years I have used a 5 per cent solution of soda sulphite, plus 1/2 per cent metabisulphite of potash, for wetting enlargements prior to development, and this fact may to some extent explain the absence of any stain from the pyro developer.

A good pyro developer used after the preliminary bath of acid sulphite of soda, gives quite as good enlargements as any phenol developer is capable of, and at the present time is very much cheaper.—*The British Journal of Photography*.

WASHING SMALL PRINTS

When washing tiny prints or films such as locket photographs or "vest-pocket" film-packs in a dish, they are liable to get washed overboard and to make a bee-line for the waste-pipe. To prevent this occurring, I



support the dish on a pot which is standing in a larger dish. Should a print slip out of the top dish it falls into the lower one, where the flow of water is quite gentle and very unlikely to carry the print any further.—*The British Journal of Photography*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A-DENCH

Motion picture producing companies think nothing of sending troupes of players hundreds of miles in search of "local color." It pays them in the long run, because studio sets cannot be erected without the expenditure of much money, time and effort. The scenic artist may be the most skillful man in his profession, yet he cannot put one over nature and get away with it. The artificialness will be plainly apparent to the fans, who will regard the production with disgust rather than with delight.

In an amateur photoplay, natural backgrounds are even more important, so it is up to you to inject as much local "atmosphere" as possible. You may have the idea that familiarity breeds contempt, but the fact, nevertheless, remains that folks like to recognize outdoor locations, especially as the motion picture camera presents them in a new form.

Formerly it was taken for granted that the attention of spectators could only be sustained if something was doing all the time. The word action has been misinterpreted, for the new school of directors has introduced a subtle kind of action—a physiological study of the characters. It takes years of experience to master this knack—for knack it is—so it is best to start out with the broader means of expression. By this I mean the slapstick comedy and the melodrama. You can then have the villain ducked under the village pump; the hero tied to the railroad tracks at the local crossing, or stage the fight between the hero and villain at the edge of the nearest cliff. These stunts have been put over innumerable times, and I have only suggested them so you know along which lines to work. While it is best to think up new incidents, even the commonplace ones would prove interesting because you serve them up in a new "dress." This is not to suggest, however, that you kill off any members of your filming party in actual reality, for if reasonable precautions are taken, the dangers incurred in putting over stunts are reduced to a minimum.

The big mistake made by the average regular photoplay director to-day is repeating exteriors. If he chose, he could introduce a wide variety of natural backgrounds, but he seems to prefer to confine himself to a few. This is sheer laziness in the majority of cases, for he saves time and trouble when he does

not have to use a fresh location every time. Your position, however, is quite different. Your footage will, for cost of production reasons, be limited and therefore you must make every foot count. If it is necessary to repeat a scene, take a new angle of the setting, otherwise a "close-up."

Many excellent photoplays are spoiled through onlookers being permitted to butt into a scene. The producing of an exterior always attracts a crowd, and nothing detracts more from the dramatic effect than persons who stare hard at the camera. This may be obviated if you take scenes early in the morning when few folks are about, or by rigging up a dummy camera to deceive the curious ones.

Exterior work, of course, depends wholly on the vagaries of the weather. Clear work is essential, for bad photography often hides important "business" put over by the players. Select a clear day, and if the sun is shining, the camera should be pointed North so that there will be no shadows to place the players at a serious disadvantage. Results also depend upon the right diaphragm being employed, and the most effective way by which to test the weather conditions is with a Watkin's actinometer.

The height of the lens is another important detail and it is, moreover, one which requires even more attention in exteriors, which are taken in all kinds of positions. If you run to extremes, your players will either appear like giants or else like pigmies, so a happy medium should be struck. There is no standard technique, since every worker has his own ideas of what view-point is best, though most motion picture photographers prefer to focus over the actors' heads.

It is highly probable that you will require to follow a vehicle in motion. This is done by placing the camera on a stand in another vehicle which follows behind.

An effective way of accentuating a portion of action without abruptly flashing to and fro is to "panoram" a scene. This is done by letting the tripod head slowly revolve in the desired direction.

Last, but not least, when you select locations, regard them from the angle of an artist, for they must be artistic in order to convince.

An acquaintance of mine, who is on the staff of one of the engineering publications,

has to visit a number of industrial plants in connection with his work. He tells me that the greatest factor to be considered in obtaining photographs is time, and if he has to choose between two photographers, whose time estimate differs by only half a minute, the quickest man gets the assignment. I mention these facts, because they have a direct bearing on filming in industrial plants and it may be necessary for you to educate the manufacturer in regard to the conditions which govern the production of motion pictures.

The quickest period in which you can record one thousand feet is eighteen minutes, but this does not allow a single stop. Suppose you are about to cover fifteen separate details for a one-reel picture and that almost all of these details are taken inside the plant with the aid of the portable arc lamp. This means that you will have to set your camera in fifteen different positions, but as you will undoubtedly run a close up as well as a full scene of each process, this makes thirty stops altogether. You are out to give your client good service and you know only too well that if you unduly hurry and "shoot" a scene without planning for the best effects, results are liable to be crude. A film, once produced, is permanent, and must therefore be regarded in that light. Of course, if a single scene is not satisfactory, it may be re-taken, but if, say, fifty feet are involved, it means an extra outlay of from twenty-five to fifty dollars. A happy medium would be about five minutes to each scene, so that the producing of a one reeler should consume about seventy-five minutes.

The average photoplay is but short lived, yet the long runs enjoyed by "The Birth of a Nation" in New York, Chicago, Boston, Philadelphia, Pittsburgh, San Francisco and Los Angeles, while in themselves brilliant achievements, are not so remarkable when the causes are dissected. Take, for example, New York City. In this territory there are about one thousand photoplay theaters. Griffith's masterpiece was presented 620 consecutive times at the Liberty Theater, in addition to 218 performances given at Brighton Beach during the summer season. It was seen by 812,000 people altogether, and has the distinction of having the longest run in the history of the American stage. This immense audience would about fill the New York photoplay theaters to capacity, so I am not stretching the point when I say that practically every fan in the metropolis witnessed Griffith's masterpiece.

It was only because "The Birth of a Nation" set a new precedent in photoplay presentation—but not new to the so-called legitimate stage—that it attained its series of long runs. A photoplay, no matter how expensive to produce, is cheapened because it readily lends itself to simultaneous circulation, in which case long runs and regular theater prices are out of the question. For this reason "The Birth of a Nation" won out,

because it was presented at one theater—and a "legitimate" one to lend tone—in each city. This long run stunt constitutes a shrewd business deal; that is, insofar as the exhibition end is concerned.

Possibly you have wondered why on earth the animated newspapers do not carry advertisements like their press contemporaries. The real objection is that the producers fear that, by so doing, they will incur the displeasure of the exhibitors.

Who would think of inflicting the press agency stunt on film producers? Yet the English branch of Spratt's, the well-known dog food specialists, did so on one occasion when they were favored with a contract to house the special breed of dogs that were to be employed for transport work in an Antarctic Expedition and supply their biscuits. This news item was given out to one of the animated newspapers, which availed itself of the opportunity. Before the camera man arrived at the kennels, posters and other publicity matter were displayed in prominent positions and same was duly filmed.

What the national advertiser would like to see is an animated newspaper with pictorial advertisements sandwiched in between the news items, but there are no signs at present of his cherished hopes being realized.

At a recent exposition held in Schenectady, N. Y., the honey bee industry was covered by film taking spectators through the A. I. Root Apiaries at Medina, Ohio. Practically all the details connected with honey production were shown, but the feature that appealed particularly to the general public was that of an expert, who demonstrated his skill in setting free a swarm of bees from a basket above his head, with his body stripped to the waist. He then further amazed spectators by allowing a large number of bees to flock in his hat, which he put on his head.

One of the deplorable features of the motion picture industry is the employment of babies. Their ages range from a few days old until they can toddle about. It is only to be supposed, considering that the producer endeavors to portray all phases of modern life, that he cannot get along without children. He can, at least, learn to avoid the cruelty to which the babies are often subjected. I have witnessed slapstick comedies in which it was possible to see such distressing sights as a real live baby being tossed into the arms of a person while all were on the run. I have also seen the motion picture father carry his one-year-old boy about the room topsy-turvy by means of his clothes. In the drama you often notice the players picking up babies from their cradles in a careless fashion and handling them as you and I would a bundle of rags. These are some of the most common examples. You have only to watch the faces of the babies, who often cry when they should not, to realize that they do not enjoy it.

A particularly corpulent Essanay actor was appearing in one of the George Ade fables recently. He was dressed as a woman. Scenes were being taken in a tenement district populated entirely by foreigners. Because of unfamiliarity with his attire he lost control of it, and to prevent being reduced to a costume ideal for bathing, he stepped into an alley, and attempted to re-attach his vanishing skirts. Hyphenated Americans appeared at every window and grinned broadly.

"You'll have to find a more secluded place, lady," ordered a policeman. Those weren't his words, but that was his meaning.

"But, I'm not a lady," protested the actor.

"So I suspected," quoth the copper.

"I'm a man," cried the actor.

"So? That's worse. You're pinched!"

By all rules of publicity precedents the director should appear at this moment and square things. But this being a true story, he didn't. The actor and cop repaired to a nearby back entrance and enjoyed something which no copper is averse to enjoying if the roundsman isn't near.

INSTANTANEOUS PHOTOGRAPHY OF THE PAST

The marvelous sensitiveness of the modern film has ceased to be a source of surprise, but the majority of people of the present day seem to think that great rapidity and the advent of the gelatine plate are synchronous. It is news to such to hear that as far back in the history of photography as 1851, Fox Talbot obtained a photograph of a printed hand-bill basted upon the circumference of a wheel which was made to revolve so rapidly that the printed letters looked to the eye like lines. This experiment was made in a dark-room, and the illumination employed was from the discharge of a Leyden battery. We are told in an account published in the London Athæneum of December 6, 1851, that the bill was most faithfully reproduced, not a letter being indistinct. Now the light here used was by no means equal to a low power electric lamp of to-day, and the exposure must have been about the one twenty-fifth of a second, if not much slower, in order to give a clear impression. This experiment certainly substantiates the claim for rapidity of the old time photography. We, ourselves, can remember having enjoyed photographs of processions made fifty years ago, where the uplifted feet of the men in the march were shown clearly and distinctly, and the spokes in the wheels of the fire engines which were in motion, were sharply defined; the banners too, waving to the breeze, showed distinctly the mottoes and emblems painted thereon. We have also in our possession an instantaneous view of the breaking wave on the Atlantic coast made upon a ferrotype plate (a positive direct) which would do credit to a modern snapshot for rapid exposure.

PHOTOGRAPHY A HELP TO SELL REAL ESTATE

The automobile has become a most important adjunct to the realty man's business outfit. Its first cost makes it somewhat of a luxury, but it is almost as useful and essential as a telephone. Another big help to the man who earns a livelihood by selling realty on commission is the camera. Comparatively few brokers appreciate the value and usefulness of photography in home selling. A broker will ride around inspecting and showing houses, but seldom does he think to be provided with a camera wherewith to photograph every house he inspects or shows. One broker who is a recognized specialist in house selling, because he has made such a success in that line, carries an evergrowing stock of photographs of dwellings for sale. In some cases he even has floor plans of the dwellings—drawings he has made from interior inspections of the dwellings. To get the photos takes hardly any time, but to draw the floor plans is another matter, although they are but rough outlines. With a photograph of a property, with floor plans of the house, plus a brief description of it, the size of the lot, its location and the price asked for the property, it will be seen that a broker is armed with ammunition that few of his competitors have. He is ready to talk intelligently about what he has for sale, and is able to give his customer a very good idea of the property before he shows it to him. Often the photograph saves time, because it shows just how houses look, and if the prospective buyer or home-seeker is not favorably impressed, he does not waste his own or the broker's time in visiting the property. A broker with a good camera can take pictures of dwellings wherever he goes or chances to be, and whenever he has a customer for a house the photos come in handy. They also impress the customer with the idea that the broker is wide-awake and right on the job. No matter how clever a broker is he cannot talk a house intelligently and clearly unless he knows the house thoroughly, and even then his description does not tell the story as well as a photograph and the floor plans will. "Look these pictures over," says the broker to a home-seeker. "If you see any house among these that you like and the price seems right, we will jump in my auto and take a look at the property." That spells efficiency on the part of the broker. It saves time for both himself and his customer, and time is money these days more than ever before. The average house can be photographed so as to appear clearly on a postcard. On the reverse side, a condensed description of the house, lot, location, plus the price can be written, and the postcard filed alphabetically. A collection of such photographs becomes a valuable asset. Many brokers list houses for sale or trade without inspecting them until occasion arises. Such brokers are handicapped

when competing with those who know the properties they have for sale. But even the broker, who inspects houses listed with him is at a disadvantage when he competes with the broker, who has a house-photo file. One broker said recently that the photo system would no doubt be helpful but that he had not the time to secure the photos. One Boston broker employs a boy to do the work. Every time a house is added to his sales' list he sends the boy to get a picture of it. He has the photos taken in such a way that adjoining and adjacent properties also are shown, which gives a customer a good idea, not only of the house for sale, but of the neighborhood in which it is located. Given an auto and a camera, the present-day house broker, with the excellent plat books now obtainable, has advantage such as the old-time broker never dreamed of. The trouble is that many brokers lack initiative. They follow along the old, well-beaten tracks and do not avail themselves of up-to-date facilities. If any man needs to be progressive it is the present-day realty man, for he is following a calling in which competition is extremely keen and the broker who is most likely to succeed is the one who keeps right abreast of the times, and overlooks nothing that will give him the advantage over his less progressive brother broker.

LOOK INSIDE YOUR CAMERA

A photographer will sometimes spend a lot of time trying to find the cause of a series of fogged negatives. He will look for holes in the bellows of this camera, he will overhaul his dark slides and he will test his dark-room lamp. When he fails to discover anything wrong with these, he gives up and decides that his plates or films are faulty. Before blaming his plates or films, however, he should look for reflecting surfaces inside his camera and lens mount.

When the dead-black has peeled off, or has been worn so much that its surface acts as a reflector, there is sure to be fogging trouble every time brilliantly lighted objects are photographed. As a rule, professionals use a lens that will cover a much larger plate than the one on which most of their work is done. This means that, when they make an exposure, a great deal more light enters the camera than is required for the size of plate. This excess of light, unless it is absorbed by a dead-black surface, will be reflected on to the plate by the bright parts inside the camera. When a smaller lens is used the trouble is reduced, but it is not removed so long as the reflecting surfaces remain. Even with a lens that just covers the plate, some of the light which falls on the smooth surface of the emulsion will be reflected back into the camera, and, if it strikes a bright part, may be reflected again on to a different part of the plate.

When a large lens is used it is a good plan to fix a black mask behind it of such a size and shape that it will obstruct all the rays

of light except those which actually fall on the plate. But whether a mask is used or not, and no matter what the size of the lens may be, nothing will get rid of the trouble so long as reflecting surfaces remain. Therefore, the photographer should always have at hand some dead-black varnish which he can apply to any part of the inside of his camera that is likely to act as a reflector.

For general use there is no better varnish than the one made by adding lamp-black to celluloid solution. The way to make it is to clean some old film negatives, cut them up into small pieces and put them into a bottle containing amyl acetate. They will dissolve quickly, and enough should be put in to make a thick syrup of about the consistency of treacle. This syrup will form the base of many useful varnishes and, as it improves with keeping, a good quantity should be made and kept handy.

To make a dead-black varnish, take a little of the syrup and dilute it with acetone until it is of a convenient consistency to put on with a camel's-hair brush. Then add lamp-black until the mixture gives a perfect black when applied with a brush to a piece of smooth wood or metal. It must, of course, be stirred well to produce a perfect mixture. The varnish should be applied with a soft brush, and it is generally best to give a second coat after the first one is dry.

The best lamp-black should be used—not the kind sold at the oil shop, but the better quality sold by artists' colormen. It is very cheap, and a quarter of a pound will last for several years.—*The Professional Photographer.*

PHOTOGRAPHY AND PAINTING

Photography even in its highest perfection is a chemical result controlled by artistic judgment. A painting, to be sure, is also a result of artistic employment of chemicals, the colors being chemical products. Wherein, then, is the difference? The painting is not determined by mechanical means, the chemicals are entirely under the personal control of the painter. The technical execution of a photograph may be perfect and yet it may have no artistic value or it may be artistic and devoid of technical excellence. A painting may also be faulty in technique; but in its motive, its composition and its harmony of color be all that can be aesthetically required. The great advantage the painter has over the photographer is that he can husband his resources. The light of nature is in a far higher key than any painting or photograph can render it. The highest white the painter possesses is white lead, which is darker than snow even in the shadows of the snow. The painter lowers the key of his picture to accommodate his limited scale. The photographer must take what his light gives. But as a draughtsman the camera is far ahead of the brush. No painter can approach its accuracy.



Burke & James, Inc., 240 E. Ontario St., Chicago, are introducing the new "Wait-a-Minute" automatic shutter tripper, a device that enables the operator to pose for a photograph or include himself in a group. It is sold for one dollar.

C. P. Goerz American Optical Co., 319½ East 34th Street, New York, announce a new Goerz lens—the Rotar f 8—that is particularly recommended for enlarging, copying and general photography where crisp definition is desired over the entire plate, and high speed is secondary consideration.



The above illustration is from the cover design of the new and beautifully printed catalogue of the Graflex Cameras. In addition to showing illustrations of the work of the Graflex, the book is replete with information that will prove useful to every user of a focal-plane shutter. A copy may be had free from Folmer & Schwing Division, Eastman Kodak Co., Rochester, N. Y.

A new catalogue has just been issued by the Ilex Optical Company, 626 Ilex Circle, Rochester, N. Y., showing their complete line of Ilex shutters with working parts and the various Ilex lenses. A copy will be sent free on request.

An interesting and descriptive booklet of the Imp Flashlite Gun, with practical demonstrations of its work, is being distributed by the Imperial Brass Manufacturing Co., 1205 West Harrison Street, Chicago. A copy will be sent to you on request.

The second annual exhibition of the work of the members of the St. Louis, Missouri, Camera Club, will be held in the Art Rooms of the Central Public Library from June 5th to 24th, also several lantern slide lectures will be given during this period. Admission free.

The Ansco Company, Binghamton, N. Y., favors us with copies of their 1916 Amateur catalogue. As their letter is self-explanatory we print it herewith:

"This book, we pride ourselves, is really the most attractive one we have ever issued in points of illustrative and typographic excellence. It describes the comprehensive line of Ansco Cameras, comprising fifty-eight different styles and models, Ansco Speedex Film and Film Packs, Cyko Paper in all the amateur grades, Ansco Chemicals, and various sundries of interest to camera enthusiasts everywhere.

"The cover design typifies the joyous recollections and pleasant memories that photography awakens, the frontispiece well illustrates the theme of the introduction—that pictures and the history of mankind are inseparable—and the thumb-nail cuts on nearly every page suggest the pleasure an Ansco affords in taking travel pictures on a trip around the world.

"Some brand new camera models have been added: the Ansco Junior series and the Ansco V-P No. 0 in two styles. The former fall in line between the Folding Buster Brown and the Folding Ansco series and possess many novelties of structure. The Junior cameras are all equipped with the new Ansco self-leveling view-finder. The Ansco V-P No. 0 with focusing jacket has the distinction of being the only camera in the world taking 1½ x 2½ pictures which has a device for focusing, thus enabling the user to take full advantage of its high-grade anastigmat lens. Other new Ansco products described in this year's book are the Ansco Film Pack Adapter, and Enlarging Cyko Contrast Paper supplementing our already popular Enlarging Cyko.

"The Catalog is replete with full descriptive and price information; chapters are devoted to Ansco lenses, shutter equipment, and the exclusive structural features of the Ansco. We shall be pleased to furnish a copy to all interested and also a specimen picture taken by any model of camera an inquirer may select."

The Newark Camera Club is offering nine prizes to amateur photographers who make pictures of the various events in the two hundred and fiftieth anniversary celebration of the city of Newark, N. J., from June 1st to October 1st, 1916. Full particulars and entry blanks may be had from the Contest Committee, Newark Camera Club, 59 Mechanic Street, Newark, N. J.

A USEFUL PRINTING DEVICE

There is on the market a device, which though not designed for photographic use, becomes very handy when applied to printing.

It is called a Dim-a-lite, and as its name implies, it is used for dimming or lowering the rated candle-power of any lamp of not greater than 40-watt capacity. Four changes of light volume are given by the Dim-a-lite, and it is readily seen that when they are placed in the lamp receptacles of the printing machine, or other device, they allow a wide range of use.

Suppose you have a thin negative, or, that you wish to use bromide paper; the ordinary lamps being too strong, you have only to dim them the desired amount, and then make your prints. And all this in just a second of time, without any bothersome changing of lamps or sheets of ground-glass. If you then wish to print from a dense negative, you have only to "turn them up," and you have the full candle power.

Again, suppose you have a negative that the sky does not print enough, you have only to leave the lamps under the sky "full on," and "turn down" the ones under the foreground a proportionate amount, and you can secure a print of corrected values. Or, if you have a negative not evenly lighted, that is, one side weaker than the other, you have only to adjust the lamps in the same manner, and you will get a much better print.

A trial will show that this device is very useful, and that it will prove a good investment.

HALSEY R. BAGLEY

THE CONDENSER IN ENLARGING

Enlarging lanterns in most cases are provided with a large and powerful lens between the light and the negative, which lens is known as a condenser. It may be composed of a single glass, but in all but the very simplest outfits it consists of two or else of three separate glasses. The commonest form has two, each with one very convex and one flat or slightly concave surface, the two convex surfaces facing each other in the metal cell in which it is fitted.

The function of this lens is to turn aside all but the central rays in the beam from the illuminant, so that after passing through the negative they will reach the projecting lens and thence the screen. If the condenser is removed, the purpose which it serves will be

seen at a glance; since there is no longer anything more than just a spot in the middle of the negative which is then illuminated enough to be seen on the screen.

In theory, the distance of the light from the condenser should be adjusted for each degree of enlargement. For example, if we are enlarging negatives which are $2\frac{1}{2} \times 3\frac{1}{2}$ in. in size to whole-plate, and we then proceed to enlarge one to 8×10 in.; or if we enlarge the complete $2\frac{1}{2} \times 3\frac{1}{2}$ in. negative to whole-plate size, and then enlarge only a portion of it to the same size; we ought to re-adjust the light when changing the degree of enlargement. But in practical work this is not usually a necessity, unless the alteration is a larger one than we have named, or the source of light is very small. With an incandescent mantle, very little changing is necessary; as the mantle is so large, it allows for alterations in position. It can be seen at a glance whether a change is necessary or not, as, if it is, the easel when the negative is removed from the lantern will no longer be uniformly illuminated with white light.

Although the intensity of the illumination depends to some extent upon the angle of light from the illuminant which the condenser embraces, it must not be supposed from this that large condensers give more light than small ones. They would include a wider angle of light if they were of the same focus as the small ones; but as, almost of necessity, always in fact in practice, the large condenser is of longer focus than the small one, the light has to be further from it, so there is no real gain.

It is important not to have the condenser larger than it need be, when lantern slides are being projected, or there will be a loss of light; but in enlarging this is not material, as a little longer or shorter exposure is no great matter. In buying an enlarging lantern, therefore, one should be obtained in which the diameter of the condenser is no smaller than the diagonal of the largest negative which will be enlarged. Then, if the carrier holds the negative close to the condenser, the whole will be uniformly illuminated. If the condenser were much larger than the negative the strongest illumination would be obtained when the negative was moved so far from the condenser that it was only just included in the cone of light coming from it.

No great degree of optical finish is required in the lenses of a condenser. They should be well polished, of course, and they should be fitted in the metal mount so as to rattle quite loosely; or, when the condenser gets hot and expands, it will crack. Minute imperfections on the surfaces will not show on the screen, but any spot of dirt or other blemish of appreciable size will show and should be removed. If a spot is seen on the screen and is suspected to be on the condenser, it can be settled in a moment if this is so or not, by turning the condenser slightly and noticing whether the spot moves. If it does, the con

denser when cool must be taken out and cleaned.

For enlarging purposes, it is a decided advantage to interpose somewhere between the light and the negative a sheet of fine ground-glass. The exact place may be decided by convenience. It must not be close to the light or it will crack; while if it is very near the negative, the grain of the ground-glass might conceivably show in the enlargement. But apart from this, we may fix it where we will. A place where it is easily fitted, as a rule, is close to the condenser on one side of it or the other. It may be put between the two lenses of the condenser if there is room for it in that position. There is a slight loss of light with the ground-glass, enough to make it inadvisable to use it when showing lantern slides, but not enough to counterbalance its distinct merits in enlarging.—*Photography and Focus.*

AMATEUR PHOTOGRAPHS

Here's the way the average man shows his little book of amateur photographs to a friend:

"This is supposed to be my wife, but it ain't very good. Let's see the next one. Well, that's the baby, but the sun was wrong. On this page is a family group. I took it myself, and it would be a good picture if three of 'em hadn't moved. Oh, yes! Here's one my wife took of me. Looks like the dickens, don't it? She ain't used to the camera, but notice how I'm grinning?

"And d'you see what a good background I'm posed in? I'd just got back from the office, and she just had one film left and thought she might as well snap me and finish up the roll—you see, I didn't have time to comb my hair or—what? Why, the one on the next page is a freak thing my next door neighbor snapped, showing his baby falling out of an upstairs window. Not much good—he didn't have a good light, and the baby was falling too fast to be quite in focus. Now here's another one of me—my wife never could get the hang of the camera, but people say the wink is natural. I had quite a bunch of 'em printed because she wanted 'em to give around. Oh, those pictures are pretty fair. We took them at the lakes. There's people you don't know in 'em, and you'll hardly be interested. Well, hey, Mary, what's become of that one with me in it? I wish you'd keep all these pictures together. You monkey with this book till all the best ones get lost out!

"Well, I guess the rest won't interest you. We keep 'em because they're good souvenirs. Lot of my wife's friends posed in the grand canyon and such. A professional photographer don't get the personal touches that make these snapshot pictures nice to keep. Now, just take that one of me you saw back there. It's not much good as a likeness, but they tell me there's something characteristic about it—what? Why turn back? It's on page 3."—*Cleveland Plain Dealer.*

CLEANING TRAYS AND GLASSES

There is much uncertainty as to the proper way to clean trays and glasses used in photographic work, says *Photographische Rundschau*. Many think it cannot be done without the use of acids, etc., and that special means must be employed for each different chemical. This is a mistake. It can readily be understood that bottles in which watery solutions have been contained can be thoroughly cleaned by rinsing with clean water; and this holds good with remains of salts, insofar as they are soluble in water (which is almost always the case with chemicals used in photography). If a rule is made to wash the trays and glasses immediately after using or emptying them, a thorough rinsing with water will usually be sufficient. If, however, solutions are left to evaporate in open trays or improperly corked bottles, so that precipitation takes place, and this is further changed by the action of the atmosphere so that deposits are formed, whose composition cannot be known with certainty, then it becomes necessary to resort to hydrochloric acid and other means. Many solutions form in time precipitates which become firmly attached to the sides of the bottles, but this does not necessarily require the bottle to be thrown away. In such cases, if either weak or strong acid fails to remove the deposit, try a solution of 6 parts potassium bichromate in 100 parts water, and add to this 6 parts concentrated sulphuric acid, and shake well in the bottle to be cleaned. It should not be forgotten, however, that these cleaning preparations cost money, and it will often be advisable to throw away a cheap bottle that is hard to clean.

Stoneware and porcelain trays that have become cracked in the glazing and allow different chemicals to attack and discolor the interior of the ware, can generally continue to be used, if the injury has not gone too far, if they are thoroughly rinsed with clean water each time after using; but of course much crackling of the enamel is apt to interfere with the composition of a mixture, and in such cases it will be better to renew the article where the cost is not excessive; glass or fibre trays are much cheaper. Enameled metal vessels are very untrustworthy as soon as they show cracks or chipping of the enamel.

PHOTOGRAPHS IN SILHOUETTE

A novel idea in photography is in process of development. It is called silhouetting. The figure of the sitter is posed against a large light window, which brings out a perfect outline though the figure is quite black. Some interesting effects are gotten by this method, especially with children who, having the window glass as a support, fall into most characteristic and unstudied poses. In posing for a picture of this sort, one should be careful in selecting one's gown and hat, making sure that they will produce artistic lines.

COLOR AND FORM

It sounds strange to hear Sir Joshua Reynolds say that color is a mere sensual element in art. How is it any more sensual than form or light and shade? All these may be used equally to render subjects which appeal to our animal propensities. Indeed sculpture, which is purely form, may be made as sensual as painting.

Even if Sir Joshua meant by sensual the appeal to the sense of sight only, we cannot agree with him. Beauty of form or truth of light and shade address themselves as much to the eye and no more to the intellect than color itself. Color appeals to the mind in the expression of gayety, or of sadness or of solemnity. All art is ornamental, and if color be more so than form in some paintings, it is only because such work is truer to Nature. Reynolds had a true, natural love of color despite what he asserts, and we see this love breaking out in his pictures to confound his own theory.

CLEAR GLASS ON THE NEGATIVE

Advice, emanating most frequently from artists, is given the photographer of pictorial aspiration that the negative, in order to secure a wide range of gradation, should show a small area of bare glass, so as to translate upon the print the artistic essential of a small spot of intense darkness. The practical worker, however, is aware that with the use of the gelatine plate, this advocated clear or bare glass area, is an impossibility. It is impossible to get clear glass. Instead, thereof, he gets, if you will, clear gelatine; but this tenuous film does not comport itself in the way glass does. There is a retarding action to the penetration of the light, and this action, besides, is not in proportion to the gradations up to the intense high-light, and so the relativity of tone is not that so admired by the artist. One must take all this in consideration in printing, and if desirous of securing the proper range of gradation, must employ some mechanical means of adjustment.

NOTES FROM EXCHANGES

In addition to the well-known plan of bathing the plates in a solution of sal-ammoniac, *Monckhoven-Beliński* gives the following: Rub 155 grains of chloride of lime in a little water in a dish and pour the milky fluid into a quart bottle. Add to this 300 grains of sulphate of zinc dissolved in 3 ounces of water; shake well and fill the bottle completely with water. Let stand for two days in the dark and then pour off the clear liquid, preserving it in a well corked bottle protected from the light. For use mix 1 part in 10 parts of water and immerse the plates in it for two minutes; then wash briefly in pure water.

Another formula by Prof. Namias consists of a 5 per cent solution of persulphate of ammonium to which is added from 2 to 3 per

cent of ammonia. In this the plates, after fixing thoroughly and rinsing briefly, are immersed for 10 seconds. They are then washed for 10 minutes and dried.

To remove or reduce halation: As is well-known, halation is produced by the luminous rays, which, after passing through the sensitized coating, are reflected by the back surface of the glass and thus affect the sensitized coating a second time, principally in the layer of gelatine that comes next to the glass. To remove it, the plate after development and fixing, is bleached in

Water.....	10 ounces.
Potassium Bichromate.....	77 grains.
Potassium Bromide.....	38 grains.
Nitric Acid.....	$\frac{1}{4}$ ounce.

When fully bleached, wash copiously and re-develop in a pyrogallic developer strongly bromided. This re-agent acts only on the surface of the plate, and the halation being on the inner layer of the gelatine is not brought out again. When the plate is sufficiently blackened, rinse, fix in hypo and wash well.—*Revue Phot. du Sud-Est.*

Process for preparing a Photographic Iron-Protoxide Developer in solid form:—German Empire Patent No. 286,727 (published Aug. 21, 1915) covers an invention by Drs. O. Dreibrodt and H. Rohler, of a photographic developer of iron-protioxide in solid form, whose ingredients consist of 91 parts iron sulphate, 244 parts neutral potassium oxalate, 155 parts sodium glycolate, ground separately and mixed and immediately subjected to a temperature of 100 degrees C. (212 degrees F.) The prepared developer forms a yellow powder easily soluble in water, of which 25 grains are dissolved in 100 ccm of water for use.

Another process for producing Iron-Protoxide Developer:—This is another recipe patented in Germany by Drs. Dreibrodt and Rohler, published under same date as above. An attempt has been made to give the developer greater keeping qualities by the addition of tartaric and citric acids, but with too large additions of these salts new salts are formed. It has now been found that greater durability can be obtained by using, instead of tartrate and citrate, neutral salts of monobasic and polybasic oxycarbonic acid, of which the glycolate has been found specially suitable. The quantities used can be greatly varied. An advantage of this developer is that it can always be regenerated by metallic iron. A stable developer can be made, for instance, by taking 3 parts of a 30 per cent solution of crystallized neutral potassium oxalate and 3 parts of a 30 per cent solution of neutral crystallized sodium glycolate, and adding to these 1 part of a 50 per cent solution of crystallized iron sulphate. When the strength of this developer has been reduced by use, it can be restored by adding a small quantity of metallic iron.

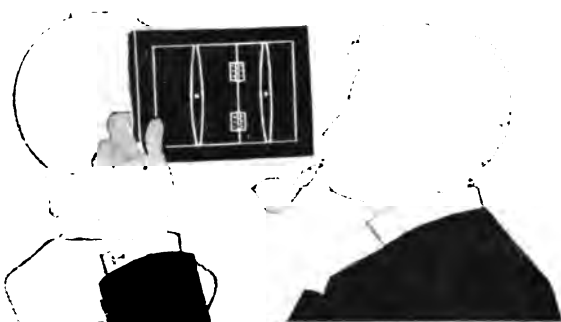
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Volume Twenty

JULY 1916

Number Seven

WITH THE FOREST DWELLERS IN NESTING TIME—HOWARD TAYLOR MIDDLETON

Of all the year, there is no time like the nesting period for intimate home portraits of the little folk of the woods and fields. That is the ideal season for the nature photographer, because it is then that mother love triumphs over fear, and the camera man is allowed to approach near enough to make "close up" pictures, as they say in the movies.

Mr. and Mrs. Gray were busily engaged at the task of renovating their last year's abode, when we arrived beneath the slender tree in which it was situated, and questioned our right to invade their privacy by loud chatterings and much flirting of plumed tails. The nest was at least thirty feet from the ground and while we deemed it possible to get some sort of picture with a telephoto, the chances for real success seemed quite remote.

George solved the problem by climbing a neighboring tree with camera and Eastman universal clamp. Arriving at the altitude of the nest, he clamped the camera to a limb, and, after having focused and removed plate-holder slide, attached a silken thread to shutter, dropping the spool to the ground.

Of course, during this preparation of ours, the squirrels had fled in wild alarm, but George had no sooner returned to earth and we had secreted ourselves behind a nearby screen of foliage, carrying the thread with us, than they came back again and resumed their home building operations. We had quite a tedious wait before they both appeared in attractive attitudes upon the nest, but at last they accommodated us by assuming very satisfactory poses, when the thread was pulled and their portraits added to those in our wild-life album.

What was our surprise several weeks later, upon approaching the same nest, to find the gray squirrels gone and chickarees (red squirrels) in possession. A slight shake of the tree-trunk sent three little furry objects scampering away to a pine, which they ascended to the topmost branch, and, swinging there, watched us out of big, bright eyes.

"Well," said George, philosophically, "I guess that means another climb."



"YOUNG CHIPPING SPARROWS." H. T. MIDDLETON, HAINESPORT, N. J.

Suiting the action to the word, he strapped the camera to his back and started in pursuit. As he drew near his quarry, they became greatly frightened and crowded to the end of the swaying limb. The distance to the nearest branch, or to the ground, was far too great for a leap, however, so they remained to be photographed.

My attempts to procure a family group of the yellow warblers proved that the element of luck had a great deal to do with the success or failure of the camera man. I arrived at the warbler residence just prior to the breaking



"YOUNG BLUE JAYS." H. T. MIDDLETON, HAINESPORT, N. J.



"CONGRATULATIONS." CHAS. H. DAVIS, NEW YORK



**"A QUIANT LITTLE MAID." SECOND PRIZE, THE CAMERA COMPETITION No. 207
MRS. WILMA B. MCDEVITT, WASHINGTON, D. C.**

This is good portraiture, and, at the same time, an exemplification of the employment of artistic taste to bring out the essential features of the subject. The art here serves the purpose of further revealing the character and disposition of the little model, and is not used, as too often is the case, to conceal defects of illumination. The lighting has been judiciously considered in the first place, and then the application of art principles made to bring out more prominently the features which are the most attractive in the picture.



"YOUNG RED SQUIRRELS." H. T. MIDDLETON, HAINESPORT, N. J.

of home ties. Already signs of restlessness among the two young warblers were quite apparent, an eager desire to see the world being clearly depicted upon their youthful countenances.

As I erected the tripod and screwed the camera into place, my hopes soared high, for I felt sure that here I would climb to great heights as official photographer to the birds, but I discovered at once that the parent warblers were exceedingly shy, and that it would take a great deal of watchful waiting from the seclusion of a distant hiding place to duplicate my earlier achievements. However, I determined to expand my best efforts, and, with that



"JOHNNIE FLICKER." H. T. MIDDLETON, HAINESPORT, N. J.
NEST IN HOLE SHOWN IN STUMP

end in view, I attached a silken thread to shutter trip, and, screening myself behind a clump of young birches, sat down to wait. For three weary hours I watched and hoped, but to no avail. The adult bird would hover sometimes within a foot of the zone covered by the lens, but never nearer. Then at the end, when the storm king took possession of the sky and the sun hid her ruddy face behind an inky blanket of wind-swept clouds, making the taking of pictures an impossibility, two yellow streaks shot out from the greenery surrounding the nest, and the father and mother warblers treated their offsprings to a farewell banquet before the final parting that was soon to come. I packed up my outfit and plodded sadly homeward, realizing, as never before, that luck does not come twice to the camera man in a single day.

It was in a lofty nook formed by the intersecting branches of a mighty beech that I first saw the blue jays. I had been watching the nest for several weeks, and it was only when I glimpsed the little heads with their coloring of light blue and purple rising above the confines of their abode, that I accepted with joy another opportunity for a photographic triumph.

Taking my binoculars from their leather case, I focused them upon my prospective subjects and found with great satisfaction that they were ripe for my purpose. Another day, I decided, and the nest would be empty.

As I stood beneath the tree, pondering upon the best line of action, the old birds returned, and with great beating of wings and raucous cries, informed me that my presence was most undesirable. In the midst of this turmoil the young jays suddenly decided that the psychological moment had arrived



"WILD ADULT SQUIRRELS ON NEST." H. T. MIDDLETON, HAINESPORT, N. J.



"FIRE OVER, DRENCHING THE DEBRIS." FIRST PRIZE IN THE CAMERA COMPETITION No. 207 R. GAILLARD, MOBILE, ALA.

A subject of ordinary interest, well handled, so as to bring out the motive. The essential feature is properly expressed without being unduly emphasized. The action of the figures, which play the part explanatory of the story, is adequately presented, suggesting movement and really the implying of progression. The surroundings are brought in good relation to the main topic, and while offering a pleasing contrast by repose, serve to accentuate the idea of continuous movement of the figures. The nice range of light and shade to intense shadow gives a good suggestion of depth to the picture and confers upon it an atmospheric effect which gives an idea of the various recession of the parts and thus an appearance of artistic relief. The line of the hose with the stream of water issuing therefrom, is a little over-attractive and thus divorces the eye somewhat from the picture as an entirety, but its management in such a subject we feel is difficult, inasmuch as its presence is so essential to the interpretation.



"THE GUNMAN." THIRD PRIZE AWARDED IN THE CAMERA COMPETITION No. 207
ALEC R. DUFF, TORONTO, CANADA

The subject itself is an unpleasant one and one hardly suited to the purpose of art, inasmuch as all art should appeal to the sense of delight. It suggests considerable of what French art is accused of—an appeal to the sensational or to morbid sentiment. Just like some of the examples of French work, it redeems its unpleasantness by the skill of the treatment of the subject. The picture does bring out the motive and expresses well the character of the subject. The photographer wishes to present, no doubt, the subject as only masquerading, but the actor's ability is eminently demonstrated. He plays his part perfectly and really makes the subject a psychological one.

upon which to begin life's long journey, and they all came plunging to earth in five fluttering feathered balls of blue.

Had Fate condescended to be kind once more? The camera man prayed fervently that this might be true as he raced after the slippery youngsters, and, gathering them one by one, placed them for temporary safe keeping beneath his broad-brimmed Stetson. Glancing eagerly about for a location upon which to erect his studio, he discovered near at hand, and at just the height of the tripod, a section of picket fence. He also noted with glee that the fence was bathed in a ray of bright sunshine—Fate was still on the job. Taking the little jays from their prison beneath the hat, he placed them gently upon the pickets and trusted that Fate might go one step further and keep them there.

When the camera was set up and focused, the photographer skulked to cover with the silken thread in his hand and prayed some more. After a long wait, during which the juveniles departed from the studio innumerable times, and were as often replaced at a vast expenditure of patience, the father jay paid his progeny a fleeting visit. As he hovered near them with wings outstretched, a wonderful sight in his gaudy suit of purple, light blue and cream, the thread was pulled cautiously but firmly, and he was gone while cries of "Jay! Jay! Jay!" rang discordantly through the forest aisles.

The mother love triumphed over fear when the female jay came to her young. She brought food with her and proceeded at once to place it where



"YOUNG YELLOW WARBLERS ON NEST." H. T. MIDDLETON, HAINESPORT, N. J.

it would do the most good, burying her head to the eyes in her children's throats in her eagerness. Once upon a time in the long ago, a negro hut had stood near the tree where the jays' nest was built, and certain reminders of a bygone home, such as a rose or two, a cactus and a lilac, still survived to mark the place. As the camera man, his portraits taken, set his face homeward, he left the little jays perched among the thorny branches of a white rose bush, a gorgeous bloom above them adding to the beauty of the picture.

The photographer's fond hopes for a family group were once again dashed unceremoniously to the ground as with red light burning and developing tray gently rocking, he watched longingly for the graceful image of the parent jays. Alas, the five juveniles were all that came leaping out from the plate to reward him for a hard day's work. "Better luck next time," the wild-life pictorialist's favorite slogan rose to his lips, and he grinned. The little *fellers* were *powerful* cute, and that was something.

Within the shelter of a graceful evergreen, situated in a grove upon a hillside where cooling breezes swayed the nest gently all the day long and the fragrance of pine needles filled the air, the chipping sparrows dwelt and were happy. The interesting trio appearing as an illustration with this story were able to indulge in short flights at the time the camera man appeared upon the scene, but did not object to his presence in the least, allowing him to approach to within three feet.

Johnnie Flicker had floundered out of his home in the old apple-tree stump



"MOTHER THRUSH FEEDING YOUNG." H. T. MIDDLETON, HAINESPORT, N. J.

and was taking his first survey of the great world, voicing his opinion of its delights in no uncertain terms, when the camera caught him.

Dainty Mrs. Thrush, or Thrasher, as the farmer boy calls her, was giving her two little thrushes their breakfast when the writer placed his Kodak close to the brush pile in which she had her home. I did not wish to interrupt this important gastronomic event more than was necessary to procure a portrait or two, so I went about my preparations of setting up a studio with silence and care. The little thrushes were so hungry, however, that a thing like having their pictures taken did not in the least interfere with their appetites; in fact, they would not deign to notice me at all, but with mouths opened to a most remarkable degree, vociferously clamored for worms.

The mother, after looking me over for a time from a neighboring limb and asking my business in a musical chirp, evidently approved, for with perfect nonchalance, she resumed her task of filling her babies' stomachs with sustenance at the rate of approximately a worm a minute. Father Thrush proved to be a provider of the first magnitude also, as every time his spouse left the nest he came winging back with a plump insect in his sturdy beak.

In taking these thrush photographs, I worked at all times within three feet of the birds without disturbing them. Because of this fact I was not forced to operate the camera shutter by means of a string pulled from a distance, as is usually the case when taking wild-life pictures, but was able to use the bulb release with perfect ease.

IS THE SMALL CAMERA PRACTICAL?— C. H. CLAUDY

THE question is asked only by the beginner. The experienced photographer knows that the answer is a very decided YES! But telling him the answer, is not very satisfactory—to the beginner. If the small camera is practical, he wants to know why, and how, and what, if any, special precautions he must take in using it.

The advantages of the small camera are most emphatically not all upon the surface. To the casual purchaser it seems as if the claim of the small camera was mostly in its small size and light weight—what may be called its vest-pocketism!

But while lack of size and weight are undoubtedly two great charms of the small instrument, they are by no means all the charms. There are others—photographic charms which are possessed by no other instrument.

For instance, there is the universality of the focus of the lens, even when used at a large opening. Lack of need to guess the distance and certainty of getting everything in focus is not only a convenience, but an essential in certain kinds of work.

Again, the ability of the little camera to "stop motion" with slow shutter speeds is a prime reason for using it. For it is not the actual speed of an object which counts in making a sharp picture of rapid motion, but the rel-

ative speed of the image of that motion. The relative speed of image is a compound of distance of lens from object and focus of lens. The less the focus, the less the rate of speed of object on the plate. Hence, a little camera with a short focus lens will stop motion with a much slower shutter speed than will a larger camera. For this reason it is possible to stop more rapid motion, to stop it in less light, and to get it sharper than with larger instruments of the same general type.

This does not mean that a pocket Kodak will do better work in stopping motion than will a high-speed press Graflex. It does mean that a pocket Kodak will stop motion with a hundredth of a second shutter speed which the same shutter speed in a postal card size pocket camera will not stop.

The great disadvantage of the small camera, of course, is the little pictures it produces. But the little camera provides for that in its ability to focus everything sharply. No negative makes a better enlargement than a good one from a little camera, and if the work is done properly and without asking for an unheard-of degree of enlargement, that work has often the quality of contact prints.

Of course, like everything else in photography, there is a right and a wrong way to use the little camera, and the principal mistake which most of those who use the little camera for the first time usually make, is this: They regard it as a toy. Because it is little, and also, probably, because the films are inexpensive, they look upon it as a means of "shooting" at everything and anything. They seem to pay little attention to light, stop or exposure, but blaze away "because if I don't get there it is no great harm done."

Naturally, this is wrong. A consideration of the light, the stop, the



ORIGINAL PRINT $2\frac{1}{4}$ INCHES WIDE; ENLARGEMENT $6\frac{3}{4}$ INCHES

exposure and the composition are exactly as important with the little camera as with the large. So, too, there is a necessity to hold the small instrument still. Just because it will stop motion more quickly than a larger camera is no reason for asking it to make a picture while dangling it at the end of one finger.

Again, for some mysterious reason, many beginners seem to think the small camera light-proof in all circumstances. It is light-proof, as far as its interior is concerned, of course. But it isn't any more able to make a picture with the sun shining into its lens than is an eight by ten camera. And the sensitive material in a little camera is as foggable through the ruby window behind, if laid back up in the sun, as the film in any Kodak, Graflex or Ansco of any larger size.

Perhaps in nothing does the little camera give the better service to the beginner than in the saving of expense. Thus, it is a common experience to make a dozen exposures in an afternoon's ramble and find only one or two that are really wanted. Until one learns to disassociate color from form, many a landscape which appears beautiful will come out monotonous. With the larger camera, seventy or eighty cents has gone in film, and proportionately have paper and chemicals been wasted. With the little camera the expense is cut in four, and the one or two pictures that are really wanted can either be enlarged or secured some other time with the larger instrument.

The photographer who is anxious to do pictorial work can find two uses for his little camera which cannot be successfully accomplished by any other instrument. One is the making of notes for a picture which is really to be worked over—much as a landscape painter will make numberless half-finished sketches from various points of view before deciding exactly from what angle he desires to paint. The photographer can use his small camera not only to show him the exact composition he will get from various points of view, but he can use it to show him at home, and in the quiet of a moment devoted to study, the effect of different lightings upon a favorite or selected landscape.

The other thing the little camera can do for the would-be pictorialist is to increase his chances if he is of that often derided, but nevertheless very successful, class of pictorial workers—the "hit-or-miss" photographers.

It is obvious that if one photographs one subject from enough angles and in enough different lightings, using various stops and times, one must, eventually, get something approaching the best which can be secured. But to do this with a large instrument, no matter how much it may delight the supply man, is somewhat expensive! The little camera is the answer, and some very stunning results often come from a dozen or more shots at one subject, all made in a few minutes and the best picked out at leisure.

For all these reasons there can be no doubt of the practicality of the little camera, whether for record, pictorial or amusement photography.

But let him who takes it up as an adjunct to another and larger instrument, beware certain pitfalls!

First, the matter of leveling the instrument. Those which are most common have neither swing-back nor rising-front—nor should they be so

equipped. A little camera is not and should not be merely a big camera in miniature—it should be the most convenient, easy to use and simple instrument possible. But because it has no adjustments, is all the more reason why it should be used with great care as to its being at right angles with both the upright and horizontal planes. The house will lean back just as distressingly in a little picture as in a large one, and it is far easier to tilt the little camera without knowing it than its larger relative.

Second, exposure. It is just as important here as in the biggest camera ever made. And the tendency is to under-expose by a senseless use of too small stops. No camera needs small stops less than the little vest-pocket camera, at least as far as definition goes. Their use should be circumscribed to variations in the time of exposure which the shutter is not flexible enough to care for, or an adjustment of opening to light made necessary by the geography of the place, as for instance, cutting an $f5$ lens to $f11$ for normal work at the seaside.

Third, viewpoint. The man with the little camera has the opportunity to use a high viewpoint with ease. He can set the instrument on his head or reach it high in the air, and, having previously seen to the amount included in the view, forget for the time being, the small finder. Too many pictures suffer from "pit-o'-the-stomach," the place from which they were made. Our eyes are in our heads, not our middles, and that picture is most natural which is made from the same viewpoint from which our eyes naturally look upon a scene.

Fourth, and last of the more common mistakes usually made, is fogged film. Just why one should get under an awning or a porch to load a large film and stand in bright sunlight to load a small one, I do not attempt to say. The small size and slight cost of the little films may breed a contempt of their ultimate destiny—I don't know. But I do know that many a small film is light struck at the edges where the larger ones are carefully handled, and any amateur finisher will bear out the statement. The sensitive material in the little camera is just as sensitive as that in the mastodon on its heavy tripod, and needs the same care.

The cautions, as you see, are few and simple. The advantages are many, and not all obvious on the surface. The little camera is, to many, the answer when photography is mentioned—to others, it is but an aid in the better getting all there is to be had, from the larger instrument. But in either case there can be no question that, whether you look at it from the standpoint of a maker of records, a maker of pictures, or a general key to all the land of *Photographia*, the little, vest-pocket, universal focus camera is from beginning to end a thoroughly practical and serviceable possession and in no sense whatever, a toy.





**"THE SCOUTS." SECOND PRIZE IN THE CAMERA BEGINNERS' COMPETITION No. 7
L. H. FLAGEL, SHEBOYGAN, WIS.**

Here, we have a good group; but the number of individuals composing it is less than in the first award picture and so offers less difficulty in the disposition. Still, the management of the heads is pleasing and the general pose and attitude of the boys expressive and animated. Artistically, the confusion of lines of fence rails is unpleasant, though it serves its purpose in securing the good pose of the figures.



"SPRING DRIZZLE." THIRD PRIZE THE CAMERA BEGINNERS' COMPETITION No. 7
W. F. LINDSTEAD, INDIANAPOLIS, IND.

The action of the figures is good. They are progressing and the reflection from the wet pavement well treated. The architectural background is well associated. The projecting edge of the fountain is objectionable; more of it should be exhibited, or the whole excluded. The presence of the tree, though unavoidable, mars the subject. It would be better by its absence, and the front bench might also be removed advantageously.

HOT-WEATHER TROUBLES— FELIX RAYMER

THE troubles that most amateurs will be having just about this time are the same that they were last year and for many years previous to that time. They will likely remain the same for many years to come. These troubles make it almost impossible to get good negatives every year at this time, and in fact it is impossible to get good negatives unless we do something to prevent the troubles. We all, of course, have had some of our most valuable plates shed their coats in the washing water, and as a consequence have come near losing all of our religion. But the reason for this shedding of garments is very easily explained if we understand the nature of a plate. And when once this is understood we will see how almost impossible it is to get a good negative without having the right conditions for work.

If we will but read the directions and formulæ as given in the little booklets that are published by the different plate manufacturers we will find that we can easily conform to the required conditions and thus save many uncalled for annoyances as well as a loss of actual material. First of all I would like to impress upon the minds of my readers the importance of fully understanding



"THE BIRTHDAY PARTY." FIRST PRIZE IN THE CAMERA BEGINNERS' COMPETITION
No. 7. G. S. COMBES, NEW YORK

A photograph of excellent technique and exhibiting skill in the management of the light. The expression on the countenances of the little models is worthy of much commendation. It is varied and interesting and perfectly natural, although all are intent upon the operation of the photographer, which furnishes the real motive and cancels the proper exploitation of the subject of the picture. The photographer, however, has nicely arranged the models so as to give not only individual pose of each, but a pleasing collective association of all; that is, the grouping is most excellent.

the directions and formulæ for the particular plate that you are using. If you are a user of Seed plates, study the conditions necessary to get good work on Seed plates, and study the formulæ recommended for their use, as well as all other matters pertaining to their manipulation. If you use Cramer plates do the same thing by them. Do not try to use a Seed formula for the Cramer plate, as the two plates are entirely different in their manipulation, and the formulæ for the working of them must be different. The same is true of the Hammer or other plates. All plates must be treated for their own particular emulsion, and when we try to use a formula for a certain plate that is recommended for another brand, we run the risk of something coming wrong before we are done with the work. There is positively no developer that will act the same on all plates. We may have the same ingredients in that developer but they must be in varying proportions for each brand of plates. So treat the plate you are using fairly and use the formulæ recommended for its use, and not some other that may be the very worst for it.

Next we will call attention to the question of temperature. Now these are all of them old questions and have been asked and answered hundreds of times, yet we find many that do not place the amount of importance on them that they should have. The matter of temperature is of the greatest importance to the plate. In fact the results depend upon it, and if the conditions are not right the result certainly will not be.



"BOSTON PUBLIC GARDENS AND BEACON HILL IN DISTANCE."
W. B. WALKER BOSTON

I have been in dark-rooms that were so hot that it was like taking a bath, and then if the plates came up all blocked up in the high-lights with no sparkling darts of lights they were pronounced no good and the manufacturer called all kinds of bad names. It was not the fault of the plate, for the manufacturer expressly stated that the temperature should be kept down in the summer and up in the winter. Again the developer would be so warm that it would almost float the film off the plate and of course the result was the same. Now the plates of any make will work better in a cold solution in summer than they will in a warm one. But the average workman will be in an awful hurry to see what he has, and will develop in any thing he has at hand, it makes no difference what the temperature. If it is warm, the plate will flash up all at one time and the high-lights all run together and then begin to bury down into the emulsion, so that there is no sparkle to them at all. We think we can make matters all right next time by giving less time so that development will be slower. This is not true, for the temperature has its part to perform as well as the exposure, and the part it plays has nothing to do with the exposure. Try developing one plate in a warm solution and another in an ice cold solution and see which has the finest grain and detail. It will be found that the cold solution will give a fine grained result and that the detail is fine and delicate, while the high-lights fairly sparkle, and dance up in perfect ratio.

Many resort to the use of alum to prevent the plate frilling or shedding the coat. This will answer the purpose that far, but in doing so, we do not get the same *effect* that we would get if we controlled the film by temperature. A cold temperature will give a fine grained transparent film in which the lowest parts show detail in perfect harmony. But without the low temperature and the use of alum, while we will prevent the film from frilling, we have a plate that has all of the high-lights run together and there is but little or no transparency to the film, and the grain is coarse. Try two plates: one developed in warm solution and soaked in alum to prevent frilling and the other developed in cold solution and no alum used and see which has the finest grain. Now what is the effect of coarse grain and fine grain in the resulting picture? It is this. The coarser the grain of the plate the more light is allowed to pass between the little sacs which go to make the grain, and in passing between it results in a gray high-light instead of a crisp, sparkling light. The fine grain negative holds the light back in parts that are more deeply lighted and the result is a sparkling effect to the high-lights. Again, it is much more difficult to retouch the coarse grain than it is the fine grain. It is more difficult to get the retouching to blend with the surrounding parts. The lead does not seem to match with the image and we can see every stroke. This is due to the heavy grain, allowing the lead stroke to show through the pores or sacs of film, and the result is that every stroke of the pencil shows in the print.

The developer should be mixed with ice water and it makes no difference at this season of the year how cold that water is, for it will be but a very little time before it will be warmer after it has been flowed over the plate, and as the temperature begins to come up the action of the developer will become

more rapid. But if the film is kept cold, the grain will be fine, for the reason that warm developer breaks the pores of the film, and a cold developer does not break so many, but holds them intact and prevents the film from "rotting" as the manufacturer calls it sometimes, as it would with the warm solution. Neither do I believe in the use of an acid fixing bath, for the same reason that I do not believe in the use of an alum bath by itself. If the temperature of the developer and the fixing bath are kept down, there will be no need of the alum in the bath, and the grain of the plate will be finer than it would if the alum was used. Low temperature gives a smooth grain and such is not the case with an acid bath. If a fresh hypo bath is mixed every time one develops, it in itself will be cold enough, and will give a fine grain negative. Hypo is the cheapest chemical used, and yet photographers economize in it more than any other chemical. If they were half so economical in other respects as they are in the use of hypo, they would save much more money than they do at present. But low temperature is the secret of success in dark-room work at this season of the year and there is no make-shift that will take its place. Use ice if a good soft smooth grained negative is wanted. Try both ways, the warm and cold development, and see the result.



"INDUSTRY." DONALD C. FITTS

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

A FEW WORDS ON LINE INTEREST

THE three illustrations that accompany this discussion have all one feature in common. They exploit line; and to show some interesting, if not unusual, line combinations, is the sole purpose of these prints. Modern life, with its derricks and trestles and steel architecture in construction, reveals a bewildering confusion of lines, and the photographer in his prints, "The Dredge" and "Industry," has tried to convey this impression.

It has been claimed that these things are not beautiful. Well, this is merely a viewpoint that can be disputed. If the prints in question produce a feeling of curiosity and interest, as they undoubtedly do, they serve their purpose as pictorial records. All pictorial achievements are the result of individual selection, and whether you would choose such a scene for depiction or not, is a matter of taste. Art has conclusively proven that all subjects are available, and there is no reason why a telegraph pole should not prove an interesting theme for pictorial treatment.



"THE CARRIER." DONALD C. FITTS

But subjects of this kind are not easily handled, not that they defy the ordinary laws of composition, as the latter rule even the most impressionistic and apparently lawless pictures and are applicable to every pictorial experiment, but they are more difficult to discover, as there are no precedents for their application. The amateur will be obliged to trust to his eyes alone, to strive hard, and to bring some harmony into the apparently lawless scene before him, to divide the confusion and diversity of forms into a distinct scheme of lines and masses.

This is largely a matter of viewpoint and a sense of proportion. The prints, "The Dredge" and "Industry," solve the problem fairly well. "The Dredge" was made with a No. 3 Kodak, equipped with a rectilinear lens at 11 A. M. with the sun shining through clouds. It has the effect of an etching. The two objects of interest, despite their abundance of detail, are made to look as massive as possible. Pictorially speaking, they represent the play of two intricate and curiously shaped silhouettes against a background of lighter tints. The difficulty of the theme has been conquered by contrast.

For "Industry," a Graflex with a 13-inch Goerz lens was used, and the original image was enlarged through a Verito lens. The time was 4 P. M., and the atmosphere cloudy. The effect is detail in a subdued key. A darker note here and there would have greatly helped the composition. As it is, it is merely the repetition of some of the larger patterns that relieve the smaller shapes.

In treating such scenes it is advisable not to attempt to put too much into a composition. It is almost impossible to avoid a certain awkwardness;



"THE DREDGE." DONALD C. FITTS

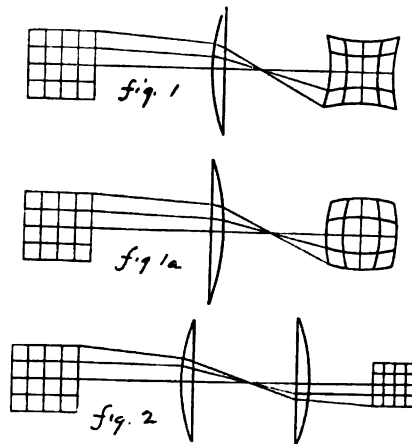
and for that reason "The Carrier" is vastly superior. It is merely a fragment, but it realized what it attempted to do. As you notice, it is little more than the juxtaposition of vertical and horizontal dark line-shapes against lighter triangular masses. This was done so cleverly that it produces a pictorial gratification. It is not the telegraph pole that fascinates us, but the balance of the treelike shape in the picture area, and the peculiar atmospheric condition which envelopes it. And at the same time we wonder that a telegraph pole could produce such a sensation.

The negative was made from a window on a cloudy morning in December, with a 5 x 7 view camera and a Verito 9-inch lens, f 5.6.

PAPERS FOR THE BEGINNER—CONTINUED

THERE is another error in the ordinary lens which must be corrected before it will give a true image of things—that is, a two-fold distortion of the image.

When a single lens is used in the camera and we focus the image, say, for instance, that of a building or any rectangular object, it will be perceived that the picture of that object, instead of showing the lines as straight, exhibits them as convex and concave lines. Now, this phenomenon does not show if we use instead of the lens, a pinhole to make the picture. And why? Simply because the rays of light passing through the pin hole are not refracted as with the lens.



It has been shown that the margin of a lens refracts in a greater degree than the parts toward the center. In short, one of a set of parallel incident rays is transmitted through the center without undergoing any refraction at all, and that in proportion as the point of transmission is nearer the margin or toward the center, so does the so transmitted ray become refracted in a greater or lesser degree.

Suppose we take a photograph of a square object. When the diaphragm is in front of the lens, it is the margin of the lens which gives the image of the corner of the square, (see fig. 2). The image of the center of each side is formed by a portion of the lens, which is more central and therefore less proportionately bent. When the diaphragm is behind the lens, different portions of the lens are used to form the image and consequently the distortion is a reversed one. We call the latter kind of distortion the pin-cushion distortion, because the hollowed-in sides resemble that domestic object (see fig. 1); and the former, the barrel distortion, (see fig. 1a), because its shape suggests the appearance of a barrel. It was a long time before opticians learned how to correct this distortion, or, rather we should say, neutralize it by opposing these two forms. If a diaphragm placed in front of the lens gives barrel shape, and a diaphragm behind, gives pin cushion distortion, why not over-come the two by placing a diaphragm midway between two combined lenses. It was tried and found effective and so we get our rectilinear lens, which gives us at once perfectly straight lines.

Amongst the earliest combinations which were tried, was a plano-convex achromatic, to the rear of which and at a very short distance was placed another achromatic smaller in diameter and, as a whole, concave. With such a combination it is possible to have a back lens so adjusted to the front as to cause the oblique pencils of light to be larger than the central ones, so as to give a flat field.

As we have tried to show that the uncorrected lens brings the focus on a curved field, and to have uniformity of sharpness over a general field, it would be necessary to have our ground-glass concave. Of course, this is impracticable and so we must have flatness of field by our lens. We will explain this with diagrams in our next paper.



THE PICTURE SHE TOOK

THE PICTURE HE TOOK

PRINT THE PHOTOGRAPHER GAVE THEM

THEY FORGOT TO TURN THE FILM

—Judge

PINHOLES IN NEGATIVES— “PRACTICUS”

ANY small transparent spot in a negative is called a pinhole; and a considerable degree of latitude is allowed as to size, some being as small as could be made with the finest point, while others would require a fairly stout bodkin to make a like aperture. Not only in size, but also in shape, do pinholes vary, for besides circles and ellipses we may have every shape of irregular figure which can be imagined, and when we set out to find the cause of their appearance, the size and shape prove a considerable aid in arriving at it. Nowadays pinholes are usually the result of some mechanical trouble, but in the wet collodion process they may be due to purely chemical causes, the principal of which is an excess of iodide of silver in the sensitizing bath. Particles of this salt are formed in the film, and, being practically insensitive to light, dissolve out in the process of fixing, leaving transparent spots of very small and irregular shape. The remedy is to dilute the silver bath with an equal bulk of distilled water. This will precipitate the excess of iodide, which is filtered out, the solution being then brought up to its normal strength by adding crystals or a strong solution of nitrate of silver. If preferred, the diluted solution may be evaporated down to its original bulk. Another remedy proposed by the late A. L. Henderson was the addition to the silver bath of a small quantity of nitrate of baryta. This was effective, but produced a slight veiling of the image, which, however, disappeared upon varnishing.

Pinholes on gelatine negatives are, however, the trouble with which most of our readers are familiar, and the first step toward avoiding them is to determine their character, which is best done by means of a small high-power pocket magnifier, or even a good focusing eyepiece. If the clear dots are irregular in form they are probably due to dust which has fallen upon the plate in the interval between filling the slide and development, while if they are circular or elliptical they are caused either by air-bells in the developing solution or tiny bubbles in the emulsion itself.

Dust may reach the surface of the plate in various ways, and when traveling it is difficult to circumvent it. It may be floating in the air ready to settle upon the plate after the most careful brushing, and against this there is no protection. Sir Wm. Abney found that in some circumstances it was necessary to smear the edges of the slide shutters and grooves with glycerine to trap these errant particles, but this is a remedy which will not commend itself to many. Dust is often manufactured inside the slide itself by the abrasion of the rough edges of the glass upon the woodwork of the frame, which detached particles of wood and black varnish in due course find a resting place in the most prominent parts of the image. Naturally, every particle shuts off light from the film and leaves a clear spot when the plate is fixed; while even if the particle has attached itself after exposure, it may prevent the developer

from reaching the film under it. A very simple way of minimizing the trouble when plates have been carried for a distance in the slides is to hold the slide in the position it will occupy when in the camera, and give it a sharp tap on any hard surface which may be handy. This will have the effect of dislodging any large particles which may be on the surface, so that they fall to the bottom edge of the plate, where they are out of the way. Similarly, a sharp tap on the dark-room bench when filling the slides will remove much dust, leaving only the finer particles. Backed plates are specially liable to pinholes, as the pigment frequently gets chipped off by the spring on the partition of the dark slide. It is therefore a good plan if backed plates have to be carried far to place a piece of brown paper the full size of the plate at the back of each, so that the metal spring does not come into contact with the backing.

Tiny clear circles are caused by bubbles in the developer, which are often due to the use of water drawn direct from the tap to dilute the developer. If a concentrated solution such as Rodinal be used, the water for dilution should, if possible, be boiled, or at least allowed to stand for a few minutes, to allow any bubbles to dissipate themselves. Old developer, especially if there is barely sufficient to cover the plate, is very likely to give trouble.

Some people believe that small bubbles in the glass of a lens will cause pinholes or spots of similar size in the negatives. The idea is, of course, quite erroneous. You may stick a three-penny piece on a large lens, and if it is used at full aperture the coin leaves no trace on the negative.

Under certain atmospheric conditions, some plates and also some celluloid films develop an aggravated form of the pinhole disease. I have experienced this in plates from British East Africa. Probably a calcium-fitted storage box would do much to avoid the trouble, which appears to be due to damp. Films from Egypt never show this form of pinhole, although there are usually plenty caused by sand.

To obliterate pinholes in the finished negative nothing is better than black water color applied as nearly dry as possible with a fine sable brush. Carmine is also good and works nicely. The commercial "opaques" are usually too opaque for the purpose, as on a delicate half-tone they simply substitute a white spot for a black one, necessitating much work on the print. A fine pen is often better for small pinholes than a brush, as it is not likely to deliver too much color. Very fine holes need not be stopped out, as they appear much larger in the negative than they do in the print. This is due to irradiation from the transparent spot. If such spots are touched, the chance is they will be painfully visible, and will have to be again spotted out on the print. If the holes are large enough and in the half-tones, the ordinary retouching pencil is the right thing to use, but in most cases color applied with the brush or pen is best, and is the quickest in use.—*The British Journal of Photography*.





"MARGRETHE" EDWARD H. WESTON, TROPICO, CAL.



"CHUMS." LYSANDER E. WRIGHT, EAST ORANGE, N. J.

IS FADING DUE TO SULPHUR?

SULPHURIZATION" is a word used most volubly in connection with any discussion about the nature and cause of the fading of the photograph. But what is "sulphurization?" How may its inimical action be reasonably explained? Names do not account for causes. Fading might otherwise be explained, and despite the proffered cause we are still left groping in the dark why certain prints outlast the assaults of time and exhibit almost their pristine brilliancy, while others soon fall into the sere and yellow leaf. Sulphurization, from its name, implies that sulphur is responsible for the obnoxious phenomenon of fading. We are told that this form of print deterioration is to be traced to the persistency of some sulphur combination which in course of time acts hostilely upon the silver image, converting it into a sulphide of silver. Now what chemical information have we about this silver sulphide? Why is it such a deleterious agent?

If we examine physically a specimen of silver sulphide we notice that it presents a jet black appearance as far as color in a body is concerned. We can purposely get a silver sulphide photographic image by intensification of the silver image, and the question naturally arises, Why does it strengthen a negative image and contribute to the ruin of a print? We have lantern slides intensified or toned which is practically here the same thing, with potassium sulphide, and though dating back to 1882 show no evidence of that bugbear of "sulphurization."

We looked at silver sulphide physically and found it optically black in color. Prepared by itself it is black, but when formed in the presence of organic matter, the organic body enters into the composition and then we notice a change in its color. It is now yellow.

To prove this, precipitate any solution of silver salt by sulphuretted hydrogen and there will be thrown down a violet black silver sulphide. Now mix a little starch (organic matter) in the solution and perform the same experiment and you see a yellowish precipitate. You may use any other organic body, like collodion, for instance, or gum, and you get identical results. How can we explain this difference of color? Sulphide of silver, we must bear in mind, is rather heavy, and when thrown down from a simple watery solution of the silver it precipitates rapidly by reason of its gravity, but when we make the solution somewhat viscous—or colloidal—by introduction of the organic agent we retard the deposition of the precipitate.

We keep it for some time in suspension in the liquid and in this shape it looks yellow. But the reactions in both cases are chemically identical.

When we examine a faded print, as it is called, we notice that instead of the bright original tint of the photograph we have a nasty, dingy, yellow picture in the parts not vanished. It appears, therefore, that when the sulphide of silver is in a state of fine division its color is yellowish brown, as may be seen by treating a very dilute solution (1-5000) of nitrate of silver with ammonium hydro sulphate.

TALKS ON COMPOSITION—SECOND PAPER SADAKICHI HARTMANN

LEGITIMATE IMITATION

AN amateur, at some moment of his career, will be tempted to indulge in imitation. He will see a picture or illustration that will make a special appeal to his imagination, and he will attempt to reproduce it by photographic means. Beginners are less apt to do this, as with them the pursuit carries with it enthusiasm of novelty, experiment and conquest. But there comes, after frequent failures, a time when pictures suggest themselves less readily; or, perhaps more correctly expressed, the beginner feels that he is deficient in composition and he looks about for an inspiration elsewhere in the finder of his Kodak.

There is nothing wrong about imitation, as long as it is not too slavishly pursued. To exactly copy a painting is photographically an impossibility, and all attempts I have seen, even by the best, always looked stilted and unreal. The values and textural peculiarities in the reproduction of a painting are due to entirely different technical conditions than the unavoidable smoothness of



FIG. 1

COROT

the lens image. The best one can achieve is a spiritless resemblance of the original. The only way to get about it is to study the picture we would like to imitate, to discern its relationships of lines and shapes, and then find a similar subject and to treat it with the knowledge we have gathered from the study of the original. The two accompanying examples show attempts at this kind of legitimate imitation. They have not the merit of preciseness, of a sharp clean-cut design—what we need most in photography is logical design in natural scenes—but they were done in the right spirit.

In the Corot painting of the willow trees, the leading theme consists of three tree-forms bending over the river. This should be sufficient to furnish a suggestion. It is the parallelism of three diagonal forms, surrounded by a certain confusion of detail of twigs, foliage and vegetation. This was in the photographer's mind. His tree-forms are not as curious and interesting as those of the original and the detail is too blurred, but he caught the main pictorial idea.

In the other picture, the imitation is more independent and perhaps, for that reason, less gratifying. It is only the story telling incident that is reproduced, not the principal features of the composition. And yet, strange to say, everybody, with some knowledge of contemporary art, will at once become conscious of the imitation. This proves that legitimate imitation consists of utilizing the fundamental idea of a recognized design, with all possible freedom of detail and treatment, and not to follow the original in all the minor and more unimportant parts of the composition. The study of a painting should suggest little more than a masterly scheme of composition.



FIG. 2



FIG. 3



FIG. 4

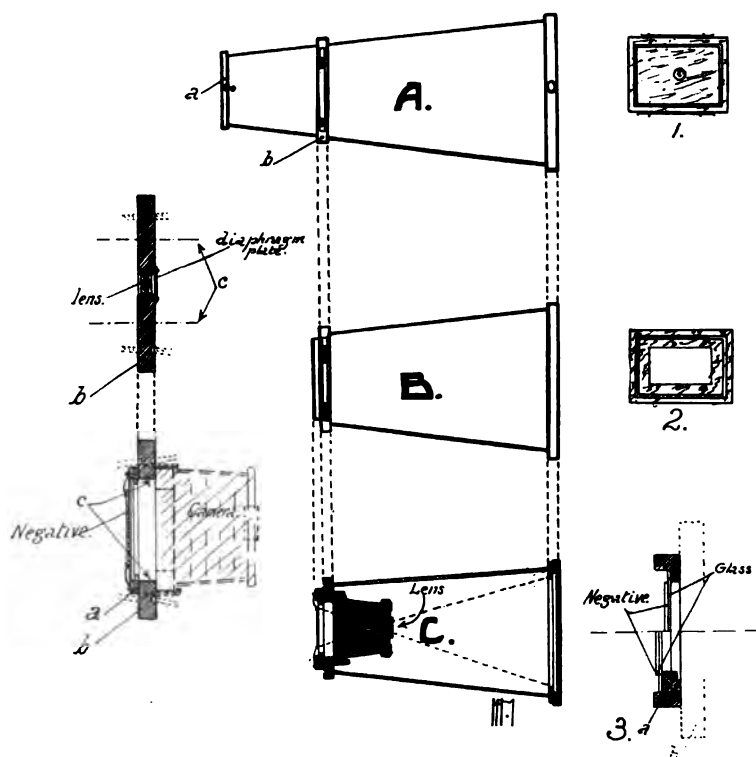
See preceding page

USING YOUR OWN CAMERA IN A BROWNIE ENLARGING BOX—HENRY MILLON

IN the first place, take your lens board and make an opening as shown in drawing No. 2, with an ordinary hand saw. This opening should be of the size of the plates you use. Then put the front board *a* on the lens board *b* being careful that the former is placed directly in the middle of the lens board. Screws should be used, as nails will cause the wood to split.

By placing the negative on the glass of the board *a* and placing a ground-glass in the paper frame, see if this gives you a sharp focus. If it is far from being in focus, use the two little pieces of wood sold with the box, to be placed in the front board *a* and so as to have the negative a little further away from the camera. The diagram No. 3, will explain how to do it. If it is almost in focus without using these pieces of wood; put it in proper focus with the focusing screw of your camera if you have one. Try to put another glass on the front board (a thicker one or a thinner one), this will probably serve the purpose.

You will find that the enlargement given with a $1\frac{3}{4} \times 2\frac{3}{8}$ inch negative will be exactly 5 x 7 inches.



By using a condenser with it you can obtain enlargements with lens wide open and quite sharp, in *one minute*, with an ordinary gaslight burner, even with a dense negative.

The supplementary piece of wood is shown in diagram No. 3, lower part. Try both (upper and lower) and see which one is convenient.

The camera should be affixed with clips or in any other way convenient. The advantages with this arrangement are that you can enlarge with full opening, thus avoiding long exposures and obtaining much better enlargements with very sharp detail, especially if you have an anastigmat lens.

The whole thing costs about \$2.—(the price of the box), perhaps ten cents more if you cannot make the opening in the lens board yourself, and have to employ a carpenter.

With my camera, Goerz Vest Pocket Tenax $1\frac{3}{4} \times 2\frac{3}{8}$ inches, Goerz Dagor lens *f*6.8, I obtain very sharp enlargements by using these supplementary black pieces of wood as shown in diagram No. 3, and by putting the focusing scale at the hyperfocal distance.

A SCREEN FOR WILD-FLOWER PHOTOGRAPHY—FRANCIS M. WESTON, JR.

THOSE of us who are interested in the photography of wild flowers in their native haunts are beginning to map out our work for the coming season and perhaps looking over last year's negatives to see where we can make an improvement. If your experience has been anything like mine, I am willing to bet that most of your failures and disappointments were caused by the wind—it is wonderful what a slight movement of the air will shake flowers and leaves beyond the possibility of taking a time exposure.

To do away with this trouble as far as possible, I have devised a screen or shield which will diffuse the light, keep the wind off, and also be readily portable. Trusting that someone beside myself may be interested, I am giving a full description with drawings.

Provide six pieces of stiff iron wire about two and a half feet long and about an eighth inch in diameter. Four of these should be sharpened at one end (Fig. 1, A), with the other end bent into an eye (Fig. 1, B), or flattened and a hole drilled in it (Fig. 1, C). One end of each of the other two pieces of wire is bent into a right-angled hook about one half inch long (Fig. 1, D). Two of the pieces, AB, are now slipped on each of the pieces, D, and the ends of D buried over as shown to keep them from slipping off again (Fig. 2).

A cover of cheap white cotton is made as shown in Fig. 3. It should be bound with tape along all edges and corners, and should have loops at the four upper corners. In width and height this cover should be made to suit the frame described above. In length it should be about four feet. One end should be split to receive the lens, or it may be more convenient to simply cut a hole for the lens and work in a piece of elastic or a draw-string. However,

owing to the difficulty of setting the shutter, this last arrangement is not suitable for any but an automatic shutter. The end of the cover opposite to the lens may be of some dark neutral tint if such a background is desired.

In setting up this screen for use, it is only necessary to drive the pointed ends of the two frames into the ground at a proper distance apart to receive the cover, and then hang the cover on by the loops. In very windy weather, the sides of the cover should be pegged down like a tent.

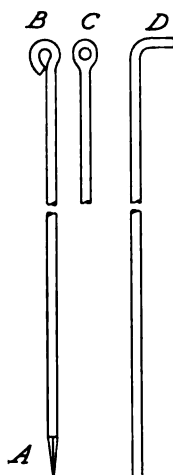


Fig. 1.



Fig. 2.

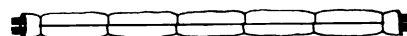
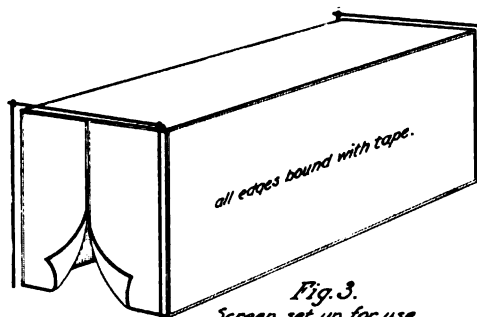


Fig. 4.
Screen rolled for carrying

In practice it will be found that a cover of the size described will include enough of the surroundings of the plant to be photographed to show that it is growing in a state of nature. A larger frame may be used if desired, but weight as well as size must be considered if it is to be carried about much. My cover and frame weighs one pound complete, and is no more trouble to carry than a metal tripod.

Besides keeping off the wind, it will be found that this cover, when placed over plants in open sunlight or in broken, patchy sunlight, will diffuse the light beautifully and will permit of getting detail in what were harsh shadows. The light can be perfectly controlled by throwing a dark cloth over the outside of the screen at any part, or even by piling grass or leaves on the outside of the screen.



HOW TO MAKE A PRINTING MACHINE OUT OF A SEWING MACHINE FRAME— E. R. TRABOLD

GO to any sewing machine store and get the frame of an old machine that they have taken in trade for a new one. They will, in many cases, give you one for nothing, but at the most, they will not charge more than fifty cents for one after they remove the head of the machine.

Now cut in the top of this machine a space 8 x 10 or whatever size you want your printer to be, and in this space fit a piece of plate glass, we will say 8 x 10; get from the grocer, a box a little larger than the space you have cut in the top, remove the cover of the box and also one side; keeping the side of the box, as you will place hinges on this so you can open and close it, the same as shown in the cut. Now fasten this box in place with screws and give the inside a coat of good white paint. Then get some good boards, white wood is very good for the cover of your printer; or, you can take the back of a 11 x 14 or 8 x 10 printing frame for your cover, this is padded and is already to be placed. Now on one side of this cover, place two good strong hinges and fasten this to the printer as shown in cuts. Before fastening this in place, some small springs will have to be placed on the screws to allow for the rise of the printing cover when you have a negative under it, or in place of the springs the hinges can be raised a trifle to allow for pressure, so you will not break the negative. Now two good springs must be secured, any blacksmith or machinist will make these out of waste material for you cheap; mine cost me fifty cents. These are for the top of the printer and give you the needed pressure. I fastened mine to the top of the cover by placing a good strong piece of wood over the top of the cover and fastened this in place with a good hinge of larger size than those placed on the cover. Then I fastened the springs on this wooden handle, and on the end of the handle I placed a small snap with a spring snap shaped like a spear-head. This was used to catch a small piece of iron, simply bent in half, so the cover would stay in place without holding it down. Next, I procured an electric bell snap that is used for ringing a door bell, when you open the door. This was used for a contact to light the lights when you closed the cover. As soon as you let the cover come up, the contact is broken and the lights go out. Two pieces of metal can be used in place of this, or, if you have an electrician wire your box for you, he will make you something easy. I wired this with regular house electric wire and placed four 100-watt tungsten lights in it, one in each corner; and in the center I placed a red light. Under the plate glass I have a ground-glass and small cleats to place vignettes, etc. You can turn off one light or simply burn as many as you want, as each light is controlled by snaps on the back of the printer. I will not say anything about the wiring, as the cuts will show just how everything is and anyone can make one in a day. It will do the work of a \$25 machine, and once you use a printer you will never have anything



else. The top has a lot of space to place paper negatives, etc. More drawers can be placed on the sides and underneath this to hold various things. I will say I also have one of these machine frames that I use for a retouching stand and it has six drawers, regular machine drawers, and any retoucher will admit these come in handy. Just try making one of these and you'll not regret it. It won't cost you more than four dollars at the most, the chief cost is the lights, and in the 8 x 10 size machine, 40-watt lights are plenty large.

What I have not made clear, can be easily understood by looking over the cuts, as everything is simple. If you have an electrician wire it for you, your machine may cost a little more, but it will pay, as he will do a good job and do it right.



REHALOGENIZATION—H. W. BENNETT

AS a means of reducing the density of negatives, rehalogenization, or the re-conversion of the silver image into its original haloid salt, presents special advantages in certain cases. It produces results which are distinctly different from those given by other methods of working. In reducing by rehalogenizing, all parts of the plate are reduced in a uniform ratio; the relation between the density of the various tones is unchanged. In some cases this is a valuable quantity; in others the character of either ammonium persulphate or potassium ferricyanide and hypo may be preferable. The character of the negative and the type of print required, must, necessarily, determine the treatment to be adopted. Thus, there are three methods available, each possessing its own distinct quality and character, all certain and simple in their working. The method must be selected to suit the special requirements of the case.

Reducing by means of rehalogenization is very simple and certain. The negative is placed in a solution which will convert the metallic silver into a haloid salt, either silver bromide, as in its original state, or that of any other halogen. After washing and exposure to daylight, the plate is re-developed—the degree of development determining the extent of the reduction—and then it is fixed and washed in the usual manner.

A simple and efficient solution for converting the metallic silver into a haloid salt is:

Potassium ferricyanide.....	4 grains
Potassium bromide.....	6 grains
Water.....	1 ounce

A stock solution should be prepared containing potassium ferricyanide one ounce, and potassium bromide one ounce and a half, dissolved in sufficient water to form nine ounces. Forty minims of this solution, containing four grains of ferricyanide and six grains of bromide, should be taken for each ounce of working solution required. It is the same solution as that most frequently employed for bleaching the image in the sulphide toning of bromide prints.

The plate is immersed in this solution until the image becomes a pale fawn-grey color throughout. As in bleaching the image in mercurial intensification, this change of color must be thorough. The densest parts of the negative must show this change of color when seen from the back of the plate.

The negative must be washed until it is completely free from the lemon-yellow color that it possesses when taken from the ferricyanide-bromide solution. From fifteen to twenty minutes' immersion in water, changed frequently, should be sufficient.

When sufficiently washed, the plate must be re-developed. Any alkaline developer will be satisfactory, but it is desirable that the solution with which the photographer is best acquainted should be employed. The degree of development determines the extent of the reduction; full development will restore the negative to its original strength.

As an illustration of working by this method, a negative was cut into strips, one piece being left untouched, the others treated in the ferricyanide-bromide solution and then developed for varying times. The developer used was pyro-soda, containing in each ounce, pyro 2 grains, sodium carbonate 12 grains, potassium bromide $\frac{1}{2}$ grain, and sodium sulphite and potassium metabisulphite mixed with the carbonate and pyro respectively in the usual manner. In this solution the image was developed fully in six minutes, it possessed the same strength as before treatment. Development for four minutes produced an image possessing approximately one-half of its original printing value.

This piece of the plate, developed for four minutes only, was subsequently intensified with mercuric bromide and sodium sulphite, this intensification restoring it to its original strength and quality in such a manner that when this strip and the piece that had not been treated were put in a printing frame and printed together, the resulting prints were practically identical in strength and gradation. There was no appreciable loss of quality or strength in the shadow details, high-lights, or intermediate tones.

When the plate has been developed to the extent desired, it should be rinsed rapidly and immersed in an ordinary negative fixing bath for the usual time of fixing. This dissolves out the haloid salt which the developer has not converted into metallic silver, and so effects the reduction. After fixing, the plate is washed in the usual manner and put up to dry.

The strength of the plate, or the degree of reduction effected, cannot be determined satisfactorily by examination during development. The unreduced haloid salt gives the impression of much greater density than the image really possesses, especially in the earlier stages of development. A proportion of the time required to produce full density is the most satisfactory method of judging the degree of reduction. Half of this time should give from one-fourth to one-third of the original printing value, and two-thirds of this time about one-half of the original value.

It is absolutely essential that the plate should be exposed to daylight, or its equivalent, throughout the working, and particularly during development. Ten or twelve inches of magnesium ribbon may be burned at about a foot from the plate if the work has to be carried on at night. But it is important that this should be done as soon as the plate is placed in the developer. It is a singular fact—a fact that is difficult to explain—that exposure to a strong light before the plate is placed in the alkaline solution, will produce comparatively little effect; but the exposure to light when the plate is in the developer is very effective, rapidly giving an image capable of being developed to full strength. When working by daylight, no difficulty will arise if the whole operation is carried out in a well-lighted room.

This method of reduction appears to be very little known and very rarely practised. It forms, however, a valuable addition to the processes that are better known and more extensively employed. Its character is different and distinct.—*Photography and Focus.*

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, PUBLISHER

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.55 Countries in the Postal Union, \$2.25. Single copies, 15 cents.

PERSPECTIVE AND FOCUS

THERE are two things upon which the painter mainly relies to give, on his flat canvas, the appearance of a recession of planes. The one is that kind of perspective which is called linear, where there is a diminution in the size of objects from foreground to distance. The other is the presentation of the planes as if there were an increase in the density of the atmosphere from the foreground to the extreme distance, which causes a corresponding falling off in the exhibition of detail. This is called the ærial perspective. These are the two main methods which were pre-eminently employed by the painter to effect the deception of recession of the planes. There are other devices of art often made use of for this same purpose, such as the choice of bold features in the foreground, brilliant lights, deep shadows and different handling of parts of the picture with the brush. Some of which are even available by the photographer, and capable of increasing the pictorial effect.

The chief reliance of the landscape photographer for getting the effect of retirement is in securing this ærial perspective, since the lens if properly adapted to the subject will admirably perform the duty of linear perspective delineation. The landscape must show atmosphere, and here the photographer is up against a harder proposition than that which confronts the painter, inasmuch as he must select for exposure the scene when the atmospheric haze, which gives the illusion, is just enough to give in the negative the desired effect. He cannot, like the painter, vary at will, bring in more "here" and clear away "there," thus sharpening and heightening his effects. The photographer must choose a time when there is neither too much nor too little of the interposed, obscuring veil of air, or all the suggestion of perspective is lost. In the case of groups, and where the subject presents picturesque foreground bits, where the picture really is the foreground, atmosphere has but little modifying influence, and indistinctness of focus in the background may be of advantage pictorially. But here we presume that there are no salient lights and shades in this background. Some painters, more especially recent ones, have done much in giving relief to the figures by finishing the latter highly and painting whatever may have formed the background in a blurred way. De Konick is especially happy in his effect of relief produced in this way, but he takes care not to have anything particularly attractive in the background. Whenever a background assumes importance, even in a minor degree, it demands some accentuation.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1324. *Rudolph J. Bartels*.—"Mending." Figure rather good in pose, but the lighting is poorly managed. The figure should have been placed further from the source of light. Such an arrangement would give better relief, and at the same time exclude the objectionable mass of the white curtain at the right.

1325. *Marguerite Balhrope*.—"Motherhood." The flashlight was not properly managed. The apparatus should have been raised above the height of the model so as to strike the subject at about an angle of 45 degrees. It would have thus distributed the light and given you a pleasing shadow, which is lacking in the picture. The position of the head is bad; what we see of the face is merely an unpleasant line. The head should have been turned facing you. The background is annoying by reason of the window coming so directly against the head. The

baby shows up better, simply because, here, your light had more elevation.



No. 1336. *Data*.— $2\frac{1}{2} \times 4\frac{1}{4}$ Brownie; achromatic lens; stop 3; April 1 P. M., sunshine; 1-50th second exposure; Nepera developer; regular velvet Velox print.

1326. *C. D. Learn*.—"Portrait." The contrast is excessive; mere opposition of black and white without a single connecting shade. The lighting is too flat; the pose stilted and awkward. The lower part looks as if the limbs were amputated, and the coat of the model is funereal. The unpleasant accessories are intensified by the bad photography.

1327. *Dr. J. E. L. Snyder*.—"A Rainy Day." Composition is well thought-out and the figure properly placed. The suggestion of rain, however, is not sufficiently indicated. It hardly suggests "wetness." We think you would add to the pictorial effect by cutting off the uninteresting black in the house to the left.

1328. *W. C. Dance*.—"The Coming of Spring." By no means up to your usual standard. The pose is stiff and unnatural, though the expression is not bad. The drapery is hard and unpleasant without a trace of shadow, and the background distracting by reason of the multiplicity of detail.

1329. *Simon P. Waliski*.—"Home Portrait Study." The photograph may have been made at home, but the shop background and other studio accessories present anything but home-like effect. The illumination is too flat and uniform; no light and shade upon the face. The general pose is not pleasing. The feet are projected too far and are made to appear unnaturally large,



No. 1325. *Data*.— $3\frac{1}{2} \times 4\frac{1}{4}$ Brownie; Cooke lens, f6.3; February 10 A. M., shades drawn; used an Imp Flash Gun; 1-25th second exposure; Azo E hard medium print.



No. 1329. *Data.*—5 x 7 Conley view; anastigmat lens, *f*4.5; March 3 p. m., cloudy; 4 seconds' exposure; pyro-universal developer; Darko velvet medium print.

which is an injustice to the sitter. The hand and arm resting upon the chair are not well managed, nor is the hand holding the book at all pleasing.

1330. *W. H. Russell.*—"Expectation." Action good and composition rather pleasing. The horizontal position of the fishing line is bad, however, artistically considered; though proper piscatorially. It would have made better combination with the horizontal lines in the picture had an oblique position been given it. The picture would have looked better in a vertical form. It is too long on the base line and gives too shut-in a view.

1331. *G. E. Brown.*—"The Charge." Action particularly well represented. Forward movement indicated by the curved line formed by the soldiers. It gives suggestion of progression. The technical quality is excellent.

1332. *James Slater.*—"The Fisherman." Attitude of the figure good, but there is a little too much contrast between it and the rather intense high-light of the ground. An overcast day, or a time when the light is more soft, would bring out better the good features of your figure study.

1333. *Frank L. Bey.*—"Outdoor Portrait." The pose of the figure is natural and characteristic, and the lighting of the face brings out well the expression, which is pleasing. The

chair, however, though properly associated with the subject, unfortunately forms unpleasant lines in the composition, especially where its curve repeats the curves of the knees; and also, to a less pronounced degree but still objectionable, where the right arm rests upon it. The chair had also better have been shown entirely; the man seems floating in mid-air.

1334. *Albert Lahn.*—"From the Bridge." The photograph has some elements of the picturesque; that is, the tower lends itself to the subject by its quaintness, but the effect would have been better had a lower key been taken. The light is a little too intense and we miss pleasing shadows. The picture comes out too contrasting; too black and white, with no gradation. Later in the day, when long shadows prevail, would have afforded a better opportunity.

1335. *M. Downing.*—"End of the Path." The distance approaches the eye too much and mixes with the foreground. The composition in itself is rather pleasing. Perhaps more distance might be had by pointing the camera up or down the stream.

1336. *L. Legerter.*—"An Ideal Spot." The subject is not particularly pleasing pictorially, but the composition has been well studied to get out all there is in the view. The photographic quality is excellent and the



No. 1333. *Data.*—5 x 7 Conley; R. R. lens; *f*8; June 11.30 A. M., good light; 1-25th second exposure; M. Q. developer; Impera print.

various features properly brought out. You should expend your ability on something more like a picture. One would hardly call this an ideal spot.

1337. *Wm. Ludwig*.—"A Japanese Garden." The subject is well handled and is possessed of a pleasing range of light and shade. Point of view well taken and the various parts nicely spaced. Photographic work most excellent.

1338. *Chas. D. Meservey*.—"Politics." The action of the figures is well represented, but the surroundings seem somewhat out of accord with the topic, and unless we had the enlightenment of the title, we would be at a loss to determine the motive of the picture. A picture, which is supposed to tell a story, should indicate by the figures what is intended and should appeal to the eye, not depend upon the literary agent to explain. If the models were depicted as farmers, the country setting would be appropriate, but as they are gentlemen, the discussion should have been made in a room.

1339. *Wm. H. Quinter*.—No Title. Quite a pleasing child study and rather good composition; properly balanced and the surroundings well associated. A trifle more timing would have brought out the white frock better; it needs a little more detail. A garment of a darker tone would have made the picture more pleasing. The lighting of the boy's face is particularly pleasing.

1340. *Ikko Kurachi*.—"Lovers' Lane." The particular charm in this picture is in its



No. 1339. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Graflex; B. & L.-Zeiss Tessar lens, $f4.5$; May 3 P. M., good light; 1-10th second exposure; Roylon-hydrochinone developer; Azo F hard X print.



No. 1342. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ F. P. K.; R. R. lens; U. S. 8; November 2.30 P. M., cloudy; 1-25th second exposure; tank developed; Argo print.

decorative effect. The simple elements which compose it are associated to produce an impression of symmetry by contrasts of lines and opposition of masses of light and shade. It has no other motive than to delight the eye and to appeal to the sense of visual rhythmic utterance of tones from high-light to shadow.

1341. *Robert Scheindlinger*.—"May Party." Photographic quality good, but the little actors are simply posing and tell nothing of the motive. They should have been put to some childish diversion and not placed all in a row in such a stilted way. There is nothing pictorial in such a group.

1342. *L. H. Hoyes*.—"Wind in the Oaks." The topic is well brought out. There is a suggestion of movement of the trees by wind, without recourse to too much blur. The lines of direction of the limbs suggest motion and, really, the oblique paths help this suggestion by the trend they give to the eye. The composition, though simple and of few elements, is pleasing. It is not often that one sees so much that is pictorial and with sentiment, made up with things which do not generally lend themselves to the picturesque.

1343. *Orin Crooker*.—"Late Afternoon." 3:30 P. M. is hardly late, even in September. The photograph gives evidence that the light was strong; in fact, too strong for such a subject. The consequence is we have



No. 1347. *Data*.—5 x 7 Conley camera; R. R. lens; f/8; May 5.15 P. M., bright light; 1 second exposure with 4 times filter; Instanto soft semi-matte print.

little or no gradation, no range of light and shade. The lines of the composition are good, but the flatness of the light prevents the subject having any character or sentiment. We think that under better illumination you would have gotten a pleasing picture.

1344. *Carolyn W. Brown*.—"Two Little Bears." The rather interesting figures are confused in the very uninteresting and inappropriate background. The high-lights are unrelieved. There is no difference in tone value between the fur of the little one's coat and the mass of snow, or whatever it is, against which the child is projected. Part of the garment is lost entirely in the background, forming a confused, unmeaning mass of white. The conglomeration at the top is unintelligible.

1345. *W. F. Ritter*.—"Just Hatched." Subject too confused; all of one tone. The figure is poorly posed and the chicks are hardly visible. The background spotty and most unpleasant. The photograph was taken at a time of the day when shadows are in the minimum and the light too intense for portraiture. To add to the hardness, the print is made upon a grade of paper unsuited to the contrasting nature of the negative.

1346. *N. H. Schammel*.—"Triumph of Foot Ball." The photography is poor and the light inadequate to bring out the characteristics of the monument. The background setting serves only to confuse the whole subject. There is nothing distinct or definite, and the entire picture is of one tone.

No distinction whatever in structural values of stone or vegetation, sky or ground.

1347. *Merle L. Mesner*.—"Near the End of Day." A picture composed with much artistic feeling and possessed of considerable sentiment. It has a painting-like effect and the original scene must have been particularly charming, with the soft coloring investing the view. We have considerable of this soft effect preserved in the monotone. The composition in itself is excellent and manifests good selective ability. The sky is very effective.

1348. *Walter A. McCuskey*.—"Motor Chums." The general composition is poorly managed. The boys are doing nothing and one of them looks as though he had been constrained to play his reluctant part. More of the motor should have been shown and from a point of view to better exhibit it; besides, the light is entirely too strong and the result is violent contrast; mere black and white.

1349. *S. W. Singer*.—"Park Pagoda." Your data informs us that light conditions were good, but we would think from the results you show, that as far as the taking of an architectural subject is concerned the light was most unsuitable, and therefore photographically "bad." The whole subject is flat and tame, and proper relief is not shown. Your building is too much to the top of the view, and this dwarfs its height and gives a false impression of it. The foreground is also too extended, and as there is nothing of interest in it, there is no excuse for showing so much.



No. 1351. *Data*.—5 x 7 Conley view; Cooke lens; April 1 P. M., bright light; 1/2 second exposure; pyro-soda developer; professional Cyko print.

1350. *A. A. King*.—"The Bridge." The picture is particularly pleasing for its soft effect and the general composition is interesting. The bridge is placed a little too much in the center of the view. A point of view from the left would have brought in more of the left side, and this looks like the more pictorial part. Photographic work excellent.

1351. *C. R. MacCarrick*.—"Indoor Portrait." A pleasingly posed and well-lighted portrait composition, with soft shadows and mellow high-lights. The background is perhaps a trifle too dark for the general tone of the figure; but we shall not be too positive about it, because the effect is pleasing as it is.

1352. *A. A. Gifford*.—"The Lookout Station." There is nothing pictorial in the subject and the composition is poor, besides, the intense hardness of the photograph is most unpleasant. The blank sky and uninteresting mass of rock increase the hard effect. A mere record.

1353. *A. E. Schildknecht*.—"Spring Sunshine." The print is too hard and wiry-looking, evidently the negative was much underexposed. The subject is not in the least suggestive of early Spring, unless you mean calendar Spring—but the vernal equinox

does not generally accord with the ideal early Spring. With more time, the view might have given a better idea of the snow structure and prevented the blank, harsh shadows.



No. 1357. *Data*.—4 x 5 Conley triple extension; R. R. lens; U. S. 32; May 2 P. M., weak sunlight; 1 second exposure; Cyko normal print.

1354. *James V. Durham*.—"Home Portrait." Objectionable from the distracting effect caused by the bizarre costume of the model, increased by the addition of the regularly arranged roses upon her lap. The projecting parts of the chair are also unpleasant features—and what is that mass of blurred white abutting directly against the cap?

1355. *Louis W. Gobel*.—"Study." The head is too large for the confined space into which it is crowded, and so looks too big for the body. The shadows in the face are not well connected, and the head is presented too much in profile for the proper management of such a model. The subject would have shown his character better by means of a three-quarter presentation.

1356. *A. C. Jacobs*.—"Safety First." The subject is not well presented so as to suggest the title, neither does the picture present much that is interesting. The exposure of the sky is too uniform and there is no gradation of light and shade to make it recede from the eye. The sea is too dark and intense, and gives no suggestion of water nor of its movement. The horizon line should have been straighter.

1357. *Dr. Miles J. Breuer*.—"We Passed Through Little Villages." You have included too much. Considerable of the left and most uninteresting part could be advantageously cut out, as well as the telegraph pole to the right. This would concentrate the essential parts and make the whole picture a more coherent one.

1358. *Robert H. Kraeger*.—"At the Bend of the Road." The tree is the only good feature, and it would have made a pleasing picture had the illumination been better. The lighting is entirely too flat, and this



No. 1354. *Data*.—5 x 7 Seneca; Ross lens; f11; March 3 P. M., good light; 6 seconds' exposure; pyrosoda developer; Noko medium print.

applies to the whole subject. The whole photograph is on one plane. No idea of depth or distance is suggested, because there is no variation of the light and shade.

1359. *W. A. Wood.*—"The Old Home." A most pictorial subject that is in itself quaint and full of sentiment. It is a little too extended toward the left and if about an inch here were cut off, the subject would be much improved. The character of the illumination does not bring out the best there is in the picture. It is too flat a light. A theme like this wants the presentation of deep rich shadows to be effective. Try it some time later in the day, when the light and shade are more mellow.

*

SKY EFFECTS IN PHOTOGRAPHY

The amateur photographer often inquires whether it is possible to photograph landscapes without using a filter over the lens, so the clouds in the sky will show in the print. This can be done—under two conditions.

One of these conditions exists when the light is yellowish, as sometimes happens in the late afternoon of summer and autumn days. This condition is created solely by the color of the light. Yellow light acts as a filter, subduing the intensity of the blue rays, to which all films and plates are supersensitive.

The other condition always exists when photographing extremely distant landscapes on clear days. This condition is due to the nature of the subject—extremely distant landscapes always requiring shorter exposures than average views.

When the sunlight is yellow, an exposure of 1-25 of a second with stop 16 will be about correct, for an average view, from 3 to 4.30, while 1-25 of a second with stop 8 should prove ample from 4.30 to half an hour before sunset.

Exposures that have produced correctly timed negatives of extremely distant landscapes when the sun was shining, are 1-25 of a second with stop 64 between 9 and 3, and 1-25 of a second when stop 16 was used between 7 and 9 and 3 and 6 in summer.

As obtaining good cloud effects without a filter requires accurate manipulation, the negatives must not be overdeveloped; if development is carried too far, the clouds will not show in the print. The best way to insure correct development is to use the tank, developing for exactly 20 minutes, with the temperature of the developer at exactly 65 degrees, using one tank powder.

We should bear in mind, when making pictures intended to give an idea of the size of any but familiar objects, that all things are measured by comparison with some known standard, and that if such pictures are to serve their purpose they must also portray some object whose size is known, with which the other objects can be compared. We have all seen pictures of strange birds, bugs, big trees,

high waterfalls and many other things of interest, the size of which we could only guess at, because the pictures represented no familiar objects whose approximate sizes were known. Human beings, horses, cattle, automobiles, or any other familiar objects, will serve when placed alongside (not in front of or behind) the subject, as a reliable standard for comparison.

For every "now or never" picture, when exposure is in doubt, make three negatives. Give one the exposure you think correct, another one third of this, and the other three times the exposure you think correct. One of these should make a good print.—*Kodakery.*

EFFECT OF THE MOUNT

It is really worth while to try the effect of different colored mounts upon the same photograph. A yellowish white mount, for instance, when used in connection with a landscape photograph, in which the distant atmospheric effect is represented by a perfectly neutral grey, gives a more delicate, bluish, ether-like appearance to the distance than a grey mount does. The grey mount, though inclined to a blue tint, does not give this pleasing effect. It is not necessary here to go into the reason for this, further than to say, it is due to juxtaposition of the tone of the print and the tone of the mount. It is a purely physiological effect, and we touch upon the subject merely to show how the character of a good photograph may be misrepresented by its association with the mount. In this special case mentioned it really alters the perspective of the scene, and we are sure that anyone who values the effect of atmosphere in the photograph will look to the character of the mount used. One must consider the necessity of the proper color of the garment of his print if he is desirous of its entry into art.

BLACK TONING OF BLUE PRINTS

The iron-blue process is a very cheap method of printing, and is frequently used for rough copies where fine gradation is not essential. But blue ordinarily is not very satisfactory for pictures that one wants to preserve, says *Photographische Chronik*. It may, therefore, be recalled that the blue prints can be changed to black or brown. As long ago as 1887, Lagrange published a method which has recently been dish up as new. The blue print is placed in a one or two per cent solution of nitrate of silver until the picture has almost entirely disappeared; it is then washed and redeveloped with an iron-oxalate developer.

For brown toning the following is recommended. Place the blue print in a weakly acid or neutral solution of chloride of mercury. The picture bleaches out and is then well washed and placed for a short time in a solution of sulphate of sodium; finally wash again. The picture must not be kept too long in the sulphate bath, or it will disappear.

STAIN REMOVERS

A number of inquiries of late relate to the removal of stains from various causes. *The British Journal of Photography* recently printed the following, which will prove of interest to our readers:

Avoiding Pyro Stains.—S. Roberts uses the following method for avoiding stained fingers when employing the pyro-soda developer: During development keep the tap running and have by the side of the developing dish a bowl containing a weak solution of hydrochloric acid (about one in fifty). Never dip dry fingers in the developer; rinse both before and after, and immediately the plate is immersed in hypo rinse the fingers again, and dip them in the weak acid. He has developed hundreds of plates in pyro and never had the fingers with the suspicion of a stain since following the above method; the acid, being so very dilute, has no deleterious effect on the skin.—

Removing Drying Marks from Negatives.—O. E. Challis states that he has cured several negatives that had been splashed and afterwards dried, leaving a spot of different density, by bleaching in an ordinary ferricyanide and bromide bleaching bath, and then re-developing with amidol. This method ought to be quite satisfactory for negatives that have had rain spots on them, at any rate it does not damage the negative in any way.

Removing Silver Stains.—A method which, used with a little skill involves no risk to the negative is as follows:—The negative is re-fixed in a bath made up with hypo, alum and sulphite, in which the gelatine will lose its adhesiveness and allow of any portion of the print which may have stuck to it being removed. It is then thoroughly washed and dried, and laid on a perfectly flat base, such as a piece of plate-glass covered with two or three thicknesses of paper. If now firmly rubbed over with a tuft of soft cotton wool moistened with methylated spirit, the stain can be completely rubbed off, but the pressure needs to be hard and the movement circular, as in applying retouching varnish.

John Done, as a result of forty years' experience, gives (as the only certain method of removing brown silver stains due to damp contact of silver paper with a negative) soaking in old hypo solution.

Place the film or plate in a dish of old hypo, cover it up. If the stain is "ancient" it may take a week; if recent, one to four days; but the cure is certain. Examine day by day; when perfectly clear, wash well, and the stain has gone forever. The hypo will not reduce or soften the negative.

Edgar Clifton, writing in reference to the above, points out the advantage of using the hypo method as modified by Harold Baker. The dry negative is first rubbed, on the stained portions, with Globe metal polish, the latter then wiped off and the

negative immersed in a strong, fresh fixing bath. The stain disappears in a few hours at the most. When rubbing half of a bad stain with the polish and immersing in the hypo, the "polished" part disappeared and the other part was hardly affected by the hypo.

Removing Oxidized-Developer Stain.—R. E. Blake Smith first converts the silver image into chloride by means of a solution of potassium bichromate, sodium chloride and sulphuric acid, and then oxidizes the stain (caused by oxidized developer) by means of acid permanganate solution; the silver chloride image not being affected by this latter. The deposit of manganese peroxide is removed with a solution of sulphite made acid with sulphuric acid, and then after further washing, the image is reconverted into the metallic state by means of a "developer" of metol, soda sulphite and soda carbonate.

The following are the solutions employed—

Potassium bichromate...	65 grs.	15 gms.
Conct. sulphuric acid...	400 mms.	90 c.c.s
Common Salt	1 oz.	100 gms.
Water	10 ozs.	1000 c.c.s.

The negative is washed till no yellow color shows, and then it is immersed for between five minutes and a quarter of an hour in

Potassium permanganate	6 grs.	2.7 gms.
Sulphuric acid conct...	30 mms.	14 c.c.s.
Water	5 ozs.	1000 c.c.s.

It is then washed in running water for two or three minutes, and then treated with

Sodium sulphite (cryst).	6 grs.	4.3 gms.
Conct. sulphuric acid...	8 mms.	5.8 c.c.s.
Water	3 ozs.	1000 c.c.s.

The potassium permanganate bleaches out the developer stain, but leaves in its place a manganese one, and this is removed by the sulphuric acid.

The negative is now washed for about ten minutes in running water, and then re-developed with

Metol	30 grs.	6.8 gms.
Sodium sulphite	90 grs.	20.5 gms.
Sodium carbonate	1 oz.	100 gms.
Water	10 ozs.	1000 c.c.s.

Removing Stains.—J. M. Sellors, in a paper before the Croydon Camera Club, strongly recommended the method of removing stains due to developers, etc., from negatives, originated by R. E. Blake Smith. The image is first bleached in an acidified bichromate bath, the original formula being bichromate of potash, 65 grs.; sulphuric acid, 400 minims; salt, 1 oz.; water 10 ozs. Personally he preferred and used the Piper and Carnegie bleacher in proportions recommended to obtain an average amount of intensification, as follows:—Bichromate of potash, 10 grs.; hydrochloric acid, 5 minims; water, 1 oz. After bleaching, the plate is washed for about 15 to 20 minutes to remove yellow stain, and the following solution flowed over.—Permanganate of potash, 6 grs.; sul-

phuric acid, 30 minims; water, 5 ozs. A few minutes will usually remove slight stains (for obstinate ones a longer immersion is requisite); but the plate should not remain in the solution for more than 20 minutes, or the image may be attacked. After removal, it is placed for a short time in either (a) sodium sulphite, 6 grs.; sulphuric acid, 8 minims; water, 3 ozs.; or (b) a one in ten solution of sodium bisulphite-lye, which will remove the residual tint given by the permanganate. Mr. Sellors employed the latter as being simpler. The plate is next washed for ten minutes and re-developed, preferably with amidol. The process does not perceptibly affect the gradation of the negative, as might be thought, or alter its printing value.

A Powerful Stain Remover.—R. E. Blake Smith recommends as the best method for removing almost all descriptions of stain from the negative, the permanganate bleaching and re-development process as follows:—

Solution A.

Potassium permanganate 10 grs.
Water 5 ozs.

Solution B.

Sodium chloride ¼ oz.
Alum ¼ oz.
Concentrated sulphuric acid . . . 25 minims
Water 5 ozs.

The actual bleaching bath is compounded by taking 2 parts of solution A and adding it to 4 parts of solution B. This bleacher works very quickly and does not give off noxious chlorine vapor, but is quite pleasant to use. The print is first soaked for two minutes or so in water and then immersed for ten minutes in a saturated, or nearly saturated, solution of alum. After this it is rinsed under the tap for a few seconds and then put into the permanganate-chloride bleaching bath.

After bleaching there is almost always left a slight, yellow stain (oxide of manganese) on the paper, especially where bleaching has taken place—i. e., on the parts previously occupied by the image. It is best to remove this stain before re-development, and in order to do this the print, after rinsing, is placed in:—

Alum ¼ oz.
Sodium sulphite (cryst.) 6 grs.
Concentrated sulphuric acid . . . 5 minims
Water 5 ozs.

and when the stain has disappeared, the print is washed in running water for about ten minutes, and then re-developed in:—

Amidol 6 grs.
Sodium carbonate (cryst.) 6 grs.
Sodium sulphite (cryst.) 35 grs.
Water 2 ozs.

Finally, a thorough wash brings the process to an end.

For the removal of dichroic fog an efficient method is as follows:—Take a small quantity of the well-known bichromate-chloride bleacher—

Potassium bichromate 35 grs.
Sodium chloride ¼ oz.
Concentrated sulphuric acid . . . 200 minims
Water 5 ozs.

and dilute with from five times to ten times its volume of water. The plate, after being well soaked in water, is immersed in this solution till the stain is bleached to silver chloride. The very finely grained silver forming the dichroic fog is readily acted upon by the dilute bleaching solution and entirely converted into silver chloride before any appreciable action takes place on the metal of the image. The plate is then washed, fixed, and washed again.

BROMIDE AND RESTRAINERS

A writer in *Photo Zeitung* combats the generally maintained notion of the restraining action upon the developer by potassium bromide. He claims that it merely prolongs development and the potassium iodide acts much more energetically and gives more decided contrast by small increments, producing a most intense black and white negative. On the contrary, free iodine in the developer acts as a restrainer. The iodine also increases the clearness of the plate and acts favorably upon the gradation. The picture appears almost instantaneously in all details and gains strength by prolonged development without fear of encountering fog. The proportions are from one to five drops of tincture of iodine to 40 c.c.m. of developing solution. The stock solution being in the proportion of 1 gramme of metallic iodine crystals in 50 c.c.m. of alcohol, then diluted with 50 c.c.m. of water. The developer so constituted is said to yield good results both in portraiture and landscape.

*

Photographic Chemistry.—Photo-Miniature Series No. 149. Tennant & Ward, New York.

This publication is hardly a treatise on Photographic Chemistry as its title would lead one to suppose, though a useful and practical treatise on the methods of photographic manipulation. The physical behavior of the re-agents is touched upon, but little or nothing of the peculiarities of chemical behavior. The action of the various developing agents is well explained and the peculiar advantages for special opportunities dilated upon. Reduction and intensification are treated in the same lucid way to be of essential value to the practical worker, but the theoretical part of photographic phenomena and the interaction and reaction of the chemical bodies is not explained as one would be led to anticipate under such a title. The value of the little pamphlet is in the information and suggestions it furnishes to the photographer for the best methods of using the chemical substances employed in producing the highest grade of work.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

Trick effects are so common in regular photoplays that the amateur motion picture photographer may desire to experiment on a small scale.

Suppose the character lies asleep in a chair; the soul removes itself from the body; walks about the room as though through air and finally goes back to the body.

You would have to film this situation twice on the same strip of negative, making the two images superimpose. First, gradually close the lens to zero, but on the second exposure open up the diaphragm in a like way. Before re-exposing the wound-back film, remove the gauge.

Another good effect is that where the players fancy a ghost is in their midst. The actors must remain perfectly still, which is exceedingly hard if they have to put over any emotional work. Rehearse these scenes carefully and mark with chalk the exact path the "ghost" takes. First, film the actors and permit the "ghost" to do the stunts by himself. After completing the two negatives, place one at a time in a rotary printing machine and turn the negative film toward the unexposed and sensitive side of a positive print. Pass the two films at the same time so that an impression is made. Repeat the process through the printing machine with the second negative, after which develop the positive print in the ordinary manner.

Suppose you introduce a player in a dual role and desire him on the stage at the same time without the aid of the double. The two players cannot come in actual contact, so the best a player can do is to "register" at the proper times. Divide the scene into two component parts with the aid of a thread. Attach a piece of black cardboard to the front of the camera in the exact middle of the set, and when the action in one half is completed, attend to the other half of the scene. Before shooting, remove the hood to the other side of the lens.

You must take care of perspective, for if the hero and villain were one and the same, it would be up to you to keep them both at the same distance from the camera, as if, for instance, the hero was allowed to remain in the background while the villain was near the camera, they would appear as a pigmy and a giant.

Maybe you have wondered if there are any technical secrets concerning close-ups,

especially those showing facial studies. As the lower part of the body is concealed from view, it is very simple to lay foot guides on the studio floor. These should be six-inch strips of wood, from six to eight feet long, held upright by braces. Arrange them in V shape. This method ensures perfect naturalness on the part of the players in taking their poses.

The keyhole or magnifying glass effect is technically termed a "mask". Attach a rectangular shaped plate, the size of which should be one inch by three quarters of an inch, to the lens of the camera. Inside the first mask fix another to correspond with the shape desired.

The dissolving in and out of scenes is far superior to the old abrupt method, and is especially effective in visualizing people's thoughts. Attach a lever to the diaphragm and shut off at the conclusion of a scene. Wind the first exposed film back to the camera's upper box and keep the diaphragm almost closed when commencing to expose the second scene. Open the diaphragm gradually.

If you wish to show a vision in the corner of a scene, place a mask in the lens shade. The shape of the mask depends on the portion of negative you desire unexposed, but you will have to take the vision scene with a mask which tallies with the previously exposed portion. To complete the effect, run the film back in the top box and expose same for the second time, then use a "mask" to match the previously unexposed portion.

The motion picture has entered the school; now the school has entered the motion picture. The Arkansas State University, at Fayetteville, recently had a film produced depicting student life, which was hired out to a string of theaters throughout the State in order to induce more high school pupils to enroll.

The Iowa State College at Ames went one better. Advantage was taken of a box social programme of a performance given by the Nemaha School at the local opera house presenting their college life in motion picture.

Many exhibitors, I regret to say, pay but scant attention to the health of their patrons. The figures obtained by Dr. Haven Emerson, Health Commissioner for New York City, tell their story only too eloquently. No fewer than one thousand motion picture theaters in New York City, Brooklyn and the Bronx

were visited and of these but eighty-seven were properly ventilated. The worst examples were the converted store shows, but many other houses were equipped with electric fans, which, for economical reasons, were not used, consequently this air circulation outlet was closed. In other theaters inadequate heating facilities were evidently responsible for all fresh air outlets and inlets being closed up. To quote from the report: "Perfumed disinfectants are being sprayed in some of the theaters with a cattle sprayer. The spraying process does nothing to eliminate germs coming from the mouths of patrons, which cause epidemics during the winter. Our experiments with culture plates revealed the fact that the quantity of germs immediately decreased when the fans were operated."

The stuffy atmosphere which is the inevitable outcome of poor ventilation causes the average patron to leave the theater with a tired feeling.

It was a French photographer who was enterprising enough to advertise as follows: "Nuptial Cinema. To engaged persons. Do you wish to preserve a vivid, living recollection of the happiest day of your life? Have a film photographed of the ceremony (civil or religious) of your wedding, and in after years you will be able to see yourselves on the screen—young, loving, full of hope for the future."

Because of the photographic difficulties, a private rehearsal is usually arranged. This generally passes off without a hitch, as the motion picture photographer explains in detail beforehand just how he wishes the ceremony to be performed. He stages same at his studio in a scene to represent the interior of a home or church.

Some producers seem to possess but one stock set of furniture, which appears, with minor variations, in practically every production turned out by the concern. This spoils the illusion, to say the least.

One director of my acquaintance tried out one of the local dealers, to whom he introduced himself. This dealer evidently had the hunch that producers are walking millionaires, for his rental charges were so excessive that the director hastily made a trip down town and purchased five thousand dollars worth of furniture. This seems to be the experience with furniture dealers everywhere—they fail to treat motion picture manufacturers as business men.

Out on the Pacific Coast the furniture stores only stock a limited variety of furniture and producers have to wait while their special orders are executed from the East. It is nothing unusual for furniture to go the rounds of the various studios.

The latest development in the motion picture field is adapting a photoplay for amateur theatrical purposes. Up in Canada, a class of school children enacted a certain popular photoplay on the school platform under the supervision of their teacher. The imagina-

tion and memorizing displayed was nothing short of remarkable, considering the youngsters had "learnt their parts at the local motion picture theater. Naturally, no camera was on the job—if there had been one, the film company might have sued for infringement on their rights.

"The motion picture has brought many professions into being," remarked George Julian Houtain, the well-known Brooklyn lawyer, to me recently, "and I am convinced that the time is ripe for the advent of the motion picture lawyer.

"A lawyer can only be in a position to act to the best possible advantage of his clients when he is well versed in regard to the technical details of photoplay production. The specialist, therefore, is logically the motion picture lawyer, for so many problems arise that the technical knowledge will serve him in good stead. This technical knowledge should not only include studio construction, producing, acting, photographing and scenario writing, but also exchange operating and exhibiting. The lawyer would then be competent to analyze a case from every possible angle. A manufacturer may infringe the copyright of another; a photoplayer may "jump" a contract; a theatrical actor may sue because of being unaccustomed to putting over realism—cases like these are of common occurrence. But each differs in that generally a new technicality is involved, and the ordinary lawyer may fail to present his case effectively because he cannot dissect the point, hence, the superiority of the motion picture lawyer.

"Another field for his activities will be the motion picture itself, for the law will be practiced by the film before many years have passed. In technical cases, educational films will prove of great value, especially in regard to the small details that count. The motion picture lawyer will be able to supervise the production of such films and make every foot count on behalf of his client."

A BRIEF HISTORY OF THE CINEMATOGRAPH

Few patrons of the cinema, or those directly interested in the great film industry, are familiar with the romantic history of the motion picture.

To entirely cover the history of moving-picture machines in a short article is impossible. But here is the story in a nutshell. A bet was made in 1871, by the late Senator Leland Stanford, of California, that a running horse at no time had all four feet off the ground. Edward Muybridge—an Englishman—by way of experiment, placed numerous cameras at regular intervals about the track, which, by electrical contact, were "snapped" by the horse in passing. It proved that the horse always had, when running, one foot on the ground.

This was not the first record of moving pictures, though it served to demonstrate their practicability.

Records indicate that the first machine was patented by W. E. Lincoln in 1867. It comprised objects which, revolving rapidly, gave the appearance of motion; it possessed little value.

In 1869 a Mr. O. B. Brown patented an "optical instrument" comprising a disc or moving-shutter movement, which, on revolving, projected objects with the appearance of motion. There were then no films, and translucent glass was used. This was the forerunner of modern machines.

Development dragged from then until the Muybridge experiment stated above.

In 1880 Muybridge produced in San Francisco, Cal., the "Zoopraxiscope," which projected pictures (on glass positives) on a screen.

Later, Muybridge conferred with Edison regarding a combination of his machine with the phonograph, then in its infancy; about 1883 he went abroad and held frequent conferences with M. Marey, of the Institute of France.

Marey first utilized the continuous film, though it was George Eastman who brought it to its present state of high perfection, which greatly influenced the success of the moving-picture industry.

In 1893 Lumière produced the "Cinematograph," the first machine to project from the film. Films then had only one hole on each side of each picture. Edison increased this to four on each side, and in 1896 produced his "Vitascope." These machines became the models for the greatly improved article of to-day.

Films then were very crude, permitting length of only seventy-five feet, which was an endless belt. They were threaded over spools contained in a box at the rear of lamp-house, passing over lamp-house to head of machine, thence downward through head, past projection aperture, and back to spools. This exposed film at *all times*, which was dangerous.

About 1900, longer films came in use, which necessitated a change in handling at machine head. Films were then wound on a reel mounted on top of head. After passing through head they were piled on floor. This being dangerous and destructive, a receptacle was devised and fastened to the frame below reel into which the film passed. This soon gave way to a reel known as the "take-up reel," which received the film after it had passed from the upper reel, through the head, and before the aperture projected on screen where it was.

These were a few of the steps in the march of improvement that have made possible the wonderful pictures such as we all know them to-day. And the end is still a long way off. — *The Amateur Photographer and Photographic News*.

DISAPPEARING OR "MAGIC" PHOTOGRAPHS

THOMAS BOLAS, F. I. C., F. C. S.

Sir John Herschel, in a paper which was published in the "Philosophical Transactions" seventy-six years ago (1840), pointed out that silver prints on paper could be bleached and rendered invisible by treatment with a solution of mercuric chloride, and if the print is washed after treatment with the mercuric chloride, the bleached print may be stored away, and to all appearance it is merely a sheet of white paper. At any time, however, the image may be restored by immersion in a solution of a hyposulphite.

About the year 1865, Herschel's bleached photographs became a feature of the time, and attained quite a remarkable popularity, the improvement which made them popular being the supply with the bleached photograph of blotting paper which had been saturated with a strong solution of a hyposulphite and dried. Thus, in an envelope one might buy a blank portrait of a well-known person; but as three pieces of white paper. The blotting paper was moistened, and the smooth paper was pressed between the moist blotting paper, when the action of the "hypo" almost instantly produced a fully vigorous photographic print. Professional photographers supplied portraits in this form, and at seaside resorts the visitors were exhorted to take their own photographs. Thus, to take a photograph of, let us say, the old pier at Brighton, the instruction was to stand opposite the pier and press the sheet between the moistened blotting paper, and to the surprise of the uninitiated a photograph of the pier was instantly produced.

For this a block or paper weight in camera form was supplied, and by arrangement with the photographer, or by personal making of magic photographs, a person could affect to take his own portrait, or that of another person, and at evening parties this magic photography was often a source of much amusement. Another aspect was an envelope containing the necessary sheets, by which "any person can take his own portrait," but in this case the portrait was generally a picture of a gorilla or a donkey.

Any untuned silver print may be used, whether printed out or developed, but a plain or unacidified "hypo" bath should be used for fixing. The mercurial bleaching solution is prepared by dissolving mercuric chloride in water to the strength of twenty grains to an ounce, and an addition of one drop of hydrochloric acid to each ounce is desirable. The washed print being immersed in this solution, the image bleaches out more or less rapidly, according to the nature of the coating on the paper. After this the bleached print should be washed in some six or eight changes of water, this washing extending over about one hour. The prints are then hung up to dry. Revival of the image is

best in a plain (or not acid) "hypo" bath, after which the print should be washed and dried.

When the silver image is formed in a compact film of gelatine, the bleaching and the revival do not take place instantly, and satisfactory washing is rather slow, hence a silver print without a film-like coating is desirable; the old-style prints on salted paper being eminently suitable. The specimens for illustrating this article were prepared from silver prints made by printing-out on salted paper, sensitized with ammonia nitrate of silver, this process giving an agreeable warm brown tone by mere fixation in a plain "hypo" solution; the details of the process being almost as given on page 93 of the 7th edition (1864) of Hardwich's "Photographic Chemistry."

The plain paper for sensitizing should be about as porous as ordinary unglazed typewriting paper, and a preliminary test of fitness is that when a sheet is floated on water it expands regularly and without any puckering or granulation. Years ago any photographic dealer would supply single sheets of plain photographic paper, such as Hollingsworth's, Towgood's, or the paper made at the Rives Mills, but now the best suggestion I can make for the general reader is that he should make trials with various typewriter papers till he finds a quality with the right porosity, and which expands evenly when wetted; or, as an alternative, very good plain photographic paper may be had from Messrs. Schleicher and Schull, of Duren, Rhenish Prussia. In the six-penny packages of assorted typewriting paper sold at the Yost shop on Holborn Viaduct, one may occasionally find a remarkably good paper with a linen-like surface, and paper of this sort was used in preparing most of the specimens handed to the Editor. One side having been marked in pencil, the sheet should be floated face downward on a solution made by dissolving 20 grains of Nelson's No. 1 photographic gelatine in 10 ounces of water, and when cold adding 100 grains of ammonium chloride and 100 grains of Rochelle salt. The sheet should be floated for about three minutes, then hung up to dry, and as the salted paper keeps well, a stock may be prepared. For sensitizing, a plain solution of silver nitrate may be used, 50 grains to the fluid ounce (red tones), or this solution with just enough strong ammonia added to re-dissolve the precipitate first formed (brown tones). The solution should be applied freely and evenly by means of a clean camel's-hair brush, and the sheet should be dried in front of a fire, the paper being kept in constant motion. The blind should be down, and care should be taken not to overheat the sheet, or it will be blackened. Printing and after-treatment as described above.

Exposure to ammonia will restore the image, hence a small magic photograph on thin paper may, if moistened, be revived by

being enclosed in the mouthpiece of a cigarette. Most developers will revive the image.

As the bleached magic photograph is no longer sensitive to light, there may be a host of applications which are not practicable in the case of a print bleached by a mere halogenizing method; applications in which hand work and photography are combined. Work in Indian ink, line or tint may be done on the photograph, then the whole or part of the photograph may be bleached out, and the result can be then re-photographed; or a deep-toned print may be produced in the first instance, and the hand work may be by whitening, as in the case of mezzotint. In these and similar ways decorative combinations of endless variety may be produced.—*The Amateur Photographer and Photographic News.*

PHOTOGRAPHS ON FABRICS

There is no particular difficulty in sensitizing a silk handkerchief or similar article, and when printed, toned and fixed, it will make an acceptable present if due discrimination is exercised in the choice of subject.

The material must first be prepared, for which purpose two solutions will need to be made up:

A		
Water.....	250 c.c.	9 ozs.
Tannin.....	10 grams	155 grs.
B		
Water.....	250 c.c.	9 ozs.
Table Salt.....	10 grams	155 grs.
Acetic Acid (No. 8)	37 c.c.	1 oz.
Arrowroot.....	10 grams	155 grs.

Mix solutions A and B, shake well together and filter. The resulting mixture is all the better for keeping. Completely immerse the fabric in this mixture for 3 minutes, then hang up to dry. When dry it may be sensitized by immersing for 4 minutes in a ten per cent solution of nitrate of silver, 30 grs. to oz.—acidified with a few drops of nitric acid.

Printing is carried out in the usual way, taking care to stretch the material slightly and evenly. It is advisable to slightly overprint.

A suitable toning bath is made by mixing the two following solutions:

A		
Water.....	100 c.c.	3 ½ ozs.
Gold Chloride.....	½ gram	8 grs.
B		
Water.....	250 c.c.	9 ozs.
Ammonium Sulphocyanide.....	10 grs.	155 grs.

Mix the above and shake well a few days before the solution is required for use, allowing it to stand and become clear in the meantime. For use the mixed solution may be diluted with 2 or 3 times its volume of water.

After a preliminary rinse in clear water the toned print may be fixed in a hypo bath containing 4 ounces of hypo to a pint, then very thoroughly washed and dried.

ANTIMONY TONING FOR DEVELOPED PRINTS

DR. LUDWIG STRASSER

The toning of developed prints with antimony has long been known, but it has been only briefly or casually mentioned and is seldom used in practice. It does not, however, deserve such neglect, for it gave, according to formulæ heretofore used, an agreeable red-brown tone, that is noteworthy for its great durability. In the following paragraphs the process will be fully described, and a number of newer recipes noted, which also give durable prints in every shade between cold brown and intense reddish or terra-cotta color.

Antimony toning belongs to the indirect processes. The black silver of the developed print must first be bleached out, i.e., transformed into a suitable colorless silver combination, which in its turn is changed into red-brown coloring-matter. This combination may be either a chloride, a bromide or a ferricyanide of silver; whichever of these is selected has no appreciable effect on the tone produced. A good bleaching solution consists of 30 grains of potassium ferricyanide, 15 grains potassium bromide and 3 ounces water. After bleaching, the print must be well washed.

For the toning, the antimony compound used is Schlippe's salt (Sodium Sulphantimonate), which comes in yellow crystals; on exposure to the air these become covered with a reddish crust, and are very soluble in water. Preferably this may be kept ready for use in a five or ten per cent stock solution which can be thinned with water when wanted. After using once, the diluted solution is thrown away, as under exposure to the air it is gradually decomposed, forming a yellowish-red precipitate of sulphate of antimony. It does not matter if a little of this precipitate should be present when toning. The antimony sulphate is readily soluble in a solution of sodium sulphate, which property may be utilized for cleaning trays, fingers, etc., stained by the Schlippe's salt.

As a standard solution for obtaining a handsome red-brown tone, a one-half per cent solution of the Schlippe's salt is taken. The coloring of the bleached print takes place in this very quickly and will be complete in about one minute. A longer immersion of the print does no harm, but the tone undergoes no further change. After toning, the print must be washed briefly. The character of the print is not materially affected by the toning. There is doubtless a larger amount of coloring matter in the red-brown than in the black prints, but the former gives a lighter impression to the eye, so that the print does not appear harder when finished.

Besides this red-brown color, which may be considered as normal, other tones can be obtained in various ways, the principal of which is by changing the strength of the antimony solution, which change must embrace rather wide limits in order to produce

an appreciable difference. By dilution the tone is pushed toward brown. If, therefore, a 1-20 per cent solution (i.e. the above normal solution thinned ten times), a shade is obtained between the normal tone and a cold brown, like that of sulphur toning, at the same time the whites turn somewhat yellowish,—a fault that does not occur either in the normal toning or in the one described further on. On the other hand, a stronger solution of the antimony salt gives a color shading more into red. The limit may be carried to ten times that of the normal solution, i.e., five per cent of the Schlippe's salt, in which the print takes a strong terra-cotta color. To obtain this tone it is recommended that the bleached print be dried before placing in the toning solution, in order to prevent further dilution by the water contained in the gelatine coating. To avoid using too much of the concentrated solution it is a good plan to apply it to the print with a brush or wad of cotton.

Another plan for obtaining various tones consists in using the antimony and sulphur methods together, by mixing the Schlippe's salt and sodium sulphide. Of course, the Schlippe's salt must be considerably in excess if its effect is to be perceptible. If both salts are used in one-half per cent solutions, a slightly warmer tone will only appear with three parts of the antimony solution to one part of the sulphide solution. A tone about half-way between the cold brown of sulphur toning and the normal red-brown of the antimony toning will be obtained with nine parts of the antimony solution to one part of the sodium sulphide. Of course, these methods can only serve to obtain the tones between cold brown and red-brown, but not those between red-brown and terra-cotta.

The methods so far mentioned effect the coloring during the toning of the bleached print. It is also possible to further change the tones of the antimony-toned prints by after-treatment. Starting with a normal red-brown print, the color can be pushed more toward brown by immersion in a one-half per cent solution of sodium sulphide, until the desired tone is obtained. The formation of double tones in this case would not be noticeable. By long operation of this solution or by using one of about five per cent for a shorter time, the color passes entirely to the cold brown or sulphur toning. The bleaching liquid already mentioned also changes the tone gradually from red-brown to brown. This plan is just as sure as the previous one, and has the advantage that the same solution as was used for the original bleaching can be employed. To be sure, it is hard to judge the tone of the print and to stop the operation at the right moment owing to the yellowish-green color of the liquid.

The red-brown color can also be changed to a redder tone by means of a solution of potassium cyanide. The tones obtained by this, however, are not so pleasing as the reddish tones of the previous methods with con-

centrated Schlippe's salt solutions. Besides, the cyanide, on account of its disagreeable odor, and being a powerful poison, is unpleasant to work with.

In practice, it is therefore advisable to produce the normal and red tones by treating the bleached print with antimony solutions of one-half to five per cent, and the brown tones either by the mixed sulphur and antimony toning or by after-treatment of the normal antimony color with the sulphide solution or the bleaching liquid.

The whole of the foregoing methods are not only applicable to paper, but are also excellent for diapositives. The colors obtained are very pretty when projected, and for the reasons already mentioned there is no perceptible increase of contrast between lights and shadows. Antimony toning is also adaptable for strengthening negatives, using the normal solution of one-half per cent. This strengthener is very copious, increasing the printing time some ten times. Its advantages in comparison with uranium consists in greater durability of the plates and the lack of sensitiveness to traces of hyposulphite of sodium. Moreover, it is very convenient and safe to handle, so that a thin foreground in a landscape can be strengthened without affecting the background and clouds at the same time. In doing this the negative is left in the bleaching liquid only long enough to let the thinner parts appear white, when looked at from the back of the plate, while the thicker parts remain black. After washing properly it is placed in the antimony solution which changes only the bleached parts to red-brown leaving the unbleached portions unchanged.—*Photo. Rundschau.*

TO SHORTEN THE WASHING OF NEGATIVES AND PRINTS

Among other articles for attaining this object, a correspondent of *Der Photograph* recommends hydrogen peroxide of commerce. As the peroxide has always a more or less acid reaction, in order to make it alkaline and so more effective, a few drops of ammonia are added to it just before using the diluted solution. The alkaline reaction is controlled by using a strip of litmus paper, and stopping the ammonia as soon as the paper begins to change to blue.

The solution for use consists of 100 parts water, 50 parts hydrogen peroxide (3 per cent), and a few drops of ammonia, until alkaline reaction begins. Paper prints are well rinsed for at least five minutes after fixing and then placed for from two to four minutes in above solution, after which they are again briefly rinsed. The more thorough the washing after fixing, the less will be the quantity of peroxide. The use of this method is advantageous, because in destroying the hypo it leaves nothing behind but pure water, so that further injury to the gelatine coating by chemical compounds of the hypo destroyer is not to be feared.

THE COMPLETE FIXATION OF PHOTOGRAPHIC PRINTS

We have frequently shown the difficulty which exists in removing by simple washing with water, the hypo retained by photographic prints after treatment in the customary fixing baths, and we have likewise pointed out the means which can be employed in order to facilitate to a certain extent the elimination of the hypo—namely, the use of pressure upon the prints in alternation with brief washing.

On the other hand, we have noticed that when the fixing bath has been in use for a certain number of prints and, therefore, contains dissolved in it an appreciable quantity of silver salt, the prints treated in this used bath can no longer be completely freed from all trace of hypo, no matter how thorough the subsequent washing. Such prints, as a matter of fact, are found to give regularly a yellowish brown color of greater or lesser intensity on application of silver nitrate solution.

It is probable that the double hyposulphite of silver and sodium, which is formed whilst the print is in the fixing bath, undergoes a species of dissociation in the colloidal vehicle of the print, yielding hyposulphites which are less soluble and cannot be removed by the combined action of water and pressure.

The presence of these hyposulphite compounds in the image can be detected by the characteristic reaction with nitrate of silver, even when there is used for the fixing of the prints a hypo bath which has been previously employed for only a very small number of prints, and has been used for purposes of the test long before the usual limit of exhaustion has been reached.

Our experiments on these lines have been carried out on the most various printing papers—namely, P. O. P., bromide, gaslight, collodio-chloride (Lumière "Cello") and matt albumen. In the case of all these materials the same facts were observed, whatever the vehicle of the silver salt, gelatine, collodion, or albumen.

We have also made the same observations in the case of prints treated in the customary combined toning and fixing bath. The formula employed for this latter was as follows:—

Hypo.....	250 gms.
Alum.....	15 gms.
Lead acetate.....	2 gms.
Gold chloride, 1 per cent sol..	60 c.c.s.
Water.....	1,000 c.c.s.

Twenty prints of 5 by 7 inches size were treated together in 200 c.c.s. (7 ozs.) of fresh combined bath. After continuous washing for twenty-four hours the presence of hyposulphite compounds was detected in all the prints by an intense yellow stain where the print was touched with a drop of silver nitrate solution.

In another portion, also 200 c.c.s., of fresh

bath, a different set of twenty prints was likewise treated, but the prints remaining impregnated with soluble substances were not placed in the bath until the first had been completely toned, and removed, then inserting the whole twenty prints in this way. It was found that only the first two prints could be completely freed from all traces of hyposulphite compound by prolonged washing. Starting from the third print, the silver nitrate test gave stains, which were more marked the more the bath had been used, that is to say, the greater the number of prints which had been fixed in it.

It follows from these observations that photographic silver prints remain impregnated with soluble substances containing hyposulphite and constituting a cause of more or less immediate change according to the conditions in which they are placed. We have endeavored to discover a means of remedying this defect and have found it in the treatment of the prints in a second fresh or little used hypo bath, following the washing of the prints for a time sufficient to remove the greater part of the hypo from the first fixing bath. The use of a second fixing solution has already been advocated by Wallon ("Photo-Gazette," January, 1898, p. 42), but only for prints treated in the combined bath, and with the object of making certain of fixation and avoiding the formation of a double silver sodium hyposulphite sparingly soluble in water. The necessity, however, of this second fixing was not shown and the exact conditions for the use of the second fixing bath not laid down.

This supplementary application of a hypo bath may be used, we have found, with success at any time, even after the prints have dried, provided, of course, that they have not undergone alteration. By means of the second fixer and a second washing we have been able to make certain of removing every trace of hyposulphite substance capable of detection by the silver nitrate test. This result is attained most rapidly and economically by working in the following way:—

(1) First fix as usual for about five minutes in a hypo bath, which may have been previously used, or tone in the combined bath, in the case of prints which are being treated in this way.

(2) Wash the prints for about one hour, allowing them to drain clear of the wash water about every quarter of an hour, at the same time pressing the water from them before putting them to soak again.

(3) Next place the prints for five minutes in a second hypo bath of 4 ozs. hypo to 20 ozs. water, keeping this solely for the second fixation.

(4) Again wash the prints for about an hour or an hour and a-half as after the first fixing, and at the end of this time test with a drop of silver nitrate solution on the edge of a print. It should show no appreciable

yellow color after two or three minutes. When a certain number of prints have been passed through the second fixing bath it will be found that this result is not obtained after one and a-half hour's washing, the second bath having taken up too much silver salt. It is then used as the first fixing bath and a new solution made up for the second fixer. It should, of course, be added that no useful purpose is served by a second fixing bath where an eliminator or chemical destroyer of hyposulphite is employed for the removal of the last traces of hypo from the film.—A. AND L. LUMIERE, AND A. SEYEWETZ.

GET PICTURES AS WELL AS THE FISH

"Photography is an art and almost a pastime," says Gordon Dana in the *Rod and Gun* in Canada. "If it were not for photography many of our most eventful hunting trips would be forgotten and many of our fish-stories, disbelieved."

"A camera is an essential part of the sportman's equipment; the hunter and angler should always carry one with him on his excursions."

"It is a far better reminder of the past to gaze at some photographs than to read a dozen diaries."

"There is such a thing as packing a camera about with you all day, and forgetting to use it. Many people seem to think that a camera is useful only when game is plentiful, and little think that a picture of the camp, or different views of the party, such as Bill cleaning fish, or Jim making coffee, would afterward furnish much amusement when the same group of men were gathered together to talk over the outing."

"While going through an old album some time ago, I was astonished to see so many different subjects represented."

"There were pictures taken during fishing trips, duck and partridge shooting outings, quiet camping and canoeing trips, and even long walks, and as I turned over page after page of photographs, many pleasant and sometimes humorous reminiscences flooded my mind."

"The writer has not arrived at the stage where he would be willing to entirely put aside the gun for the camera, but he considers the camera almost as important as the gun."

"Much pleasure can be derived during closed seasons with a camera. If you are fortunate enough to possess one that could be used to photograph birds on the wing, you can enjoy yourself immensely by visiting the breeding grounds of shore-birds and ducks."

"Even a picture of our friend the Red Squirrel chattering from a branch of a tree is a great addition to the album."

"Once when paddling up a swampy creek in a canoe, I came suddenly upon a great blue heron standing in the middle of the

stream not over twenty feet away. What a beautiful picture it would have made, that great blue-grey bird standing there doubtless half asleep. Of course, as luck would have it, my camera was at the other end of the canoe, and it would be useless to attempt to reach it without disturbing the heron. However, I had a try and as the result the magnificent bird rose and majestically winged his way across the marsh.

"Not long ago while on a tramp through the bush I heard a sound of rushing water. Upon investigation it proved to be a piece of 'white water,' a part of some river, of which I have forgotten the name, so swift that a canoe could not run its rapids. It was but the work of a moment, but I returned home with a picture of those rapids that was really beautiful.

"So, hereafter, on our hunting trips, let us be prepared and bring home not only game, but a collection of pictures which we can enjoy for years afterward."

WASH WELL, BUT NOT INORDINATELY

Washing of negatives and prints is an admonition frequently reiterated in our photographic periodicals, but the advice is not so frequently followed, in the hurry of daily practice. This neglect is poor economy. It saves time, but it contributes to the short life of a plate or print. Upon the thorough washing, after fixation, depends not only the permanency, but also the insurance of the negative against mishaps attending subsequent manipulation, the intensification, toning, etc.

An error, on the other hand, lies in the unnecessary prolonged washing. It is not only the loss of time demanded thereby, but also the liability of accident to the film and in some cases, the deterioration of the image itself. A negative or print is properly washed when all the hypo is eliminated from the gelatine film. The main thing to mind is, don't be economical in the use of hypo. Use a tolerably strong solution, fix thoroughly, and then you need only give a half dozen changes of water to get rid of the hypo.

TONE GRADATION

Both in the shadows and in the higher tones we must have gradations. The highest light is the foundation tone of the whole, and other notes or gradations must be co-ordinated with it. In a human face we easily overlook the soft tones, the high-lights and the graded shadows; forms and features take a stronger hold on us. A tree standing out against the sky seems flat, but in reality it is full of beautiful patches of light and shadow. Wherever a place remains free from branches, there we find deep shadows, and wherever the branches spread out, there we see shimmering light.

POTASSIUM CITRATE

The employment of potassium citrate as a restrainer by way of substitute for potassium bromide has met with favor. Indeed, the citrates of the alkalies have some advantages over bromide in checking development, inasmuch as they work well with both high and low factor developers. Pyro, where the high-lights of the image flash up first, responds readily to the checking influence of bromide, but when metol is used, where the high-lights and middle tones come out in rapid succession, bromide is of little worth in securing right contrast in the negative, and preventing flatness of image. The citrate of potash here is more efficient. It works with both high and low factor-developers—and may indeed be used more intelligently, because, it can be added after development begins, when one's judgement is better able to determine what to do.

It would take considerable experimentation to accurately determine the equivalence of the two restrainers, but practically this is not needed, as there is but little risk in the use of the citrate, unless excessively used, and this is not a likely occurrence. It is not advisable, however, to add it to your made-up stock solution, but better to keep it ready for use. Make up a solution, say, 120 grains to the ounce, and use a starter, a dram of this to every ounce of developer.

PURIFICATION OF WATER

Under certain circumstances which photographers encounter sometimes in the course of the year, when water is worth nearly its weight in gold, it is sometimes desirable to purify dirty water so that it can be used again for photographic purposes. *Photographische Industrie* has called attention to Schipiloff's method, which uses potassium permanganate for this purpose. Put five to ten centigrams of this salt in one liter of impure, foul water, in which all kinds of organisms are found, and it immediately becomes clear. Potassium permanganate oxydizes in the presence of organic matter and is precipitated in the form of a double oxide that forms a brown deposit. The rest of the permanganate unites with the lime in the water. To eliminate the permanganate, pulverized bone-charcoal is added, which, after allowing it to stand for a few minutes, or filtering the water through the powdered charcoal, at once completely purifies the water, leaving it almost chemically pure and suitable for all kinds of work, but not for drinking purposes.

MILKY FOG

When drying negatives rapidly in concentrated alcohol, after the last washing, the plate often becomes entirely covered by a milky fog. To get rid of this, place the plate for a few seconds in pure water. When the fog has disappeared, immerse the plate again in ordinary alcohol and dry it off with a sheet of smooth paper.—*Ex.*



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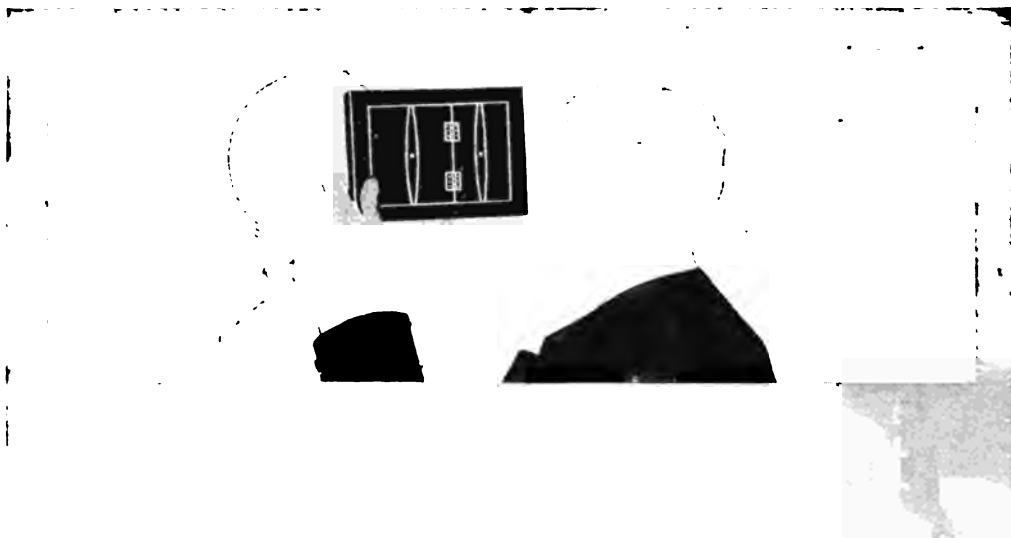
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Volume Twenty

AUGUST 1916

Number Eight

ESSENTIALS IN STEREOSCOPY— C. H. CLAUDY

PHOTOGRAPHERS who have never experimented with Stereoscopy have not as yet plumbed to the depths the pleasures of the art. No photographic process yet invented can show results equal to those obtained in the making of stereoscopic pictures. All other processes, resulting in but a single print, require an effort on the part of the beholder. The effort is one of the imagination but is not recognized as such by him who looks at a single picture: it is effort, none the less; the effort required to translate a flat surface into depth and solidity: the labor of the imagination needed to make two dimensions to appear as three.

In viewing stereoscopic pictures through a properly constructed stereoscope, three dimensions are visible without imagination. We see objects stereoscopically or as solid because we use two eyes, separated a short distance each from the other. Each eye sees any object differently from the other eye.

To prove this, hold a book a foot in front of your face with the back toward you. You will see the back on which is the title, and a little of both covers. If you close the left eye, you will see only the right cover and the back. Opening the left and closing the right eye you see only the left-hand cover and the back. This phenomena is present when we look at any object, unless that object be so far distant that the rays of light reaching our eyes from it are to all practical purposes parallel.

This limit of distance is much less in actuality than is apparent in our minds. We possess very little ability to see stereoscopically objects more than fifty feet away. In other words, the sides of a triangle which is fifty feet from base to apex and has a base of only two and a half inches appear parallel.

So well trained is our imagination, however, that much more distant objects appear as solid, three dimensional, and as standing out from the background.

In the ordinary stereoscopic camera, which has two lenses, and makes

two pictures side by side, the separation of the lenses is commonly three inches from center to center. This is slightly larger than the distance between two normal eyes. The reason for making it larger is twofold. First, it permits a slight exaggeration of solidity, which is not unpleasant in the resulting stereogram; second, it permits the use of a plate or film of sufficient size to allow some slight margin for trimming when the pictures are finished.

If a greater separation of lenses is required than three inches, it is customary to get it by making two different exposures with one camera, moving the instrument between exposures. Should one desire, for instance, to get a stereoscopic picture of cliffs across a river, or of distant mountains, it would be perfectly possible to do so by taking two pictures, twenty-five, fifty or even a hundred feet apart.

In such an experiment, should some central object appear in the center of both plates, care should be taken that the camera be perfectly level during the exposure. As might be expected, however, the resulting stereograph will not appear natural. It seems to be a model of the scene taken, rather than the scene itself. Hence, it is neither customary nor advisable to increase the normal eye distance more than half an inch; that is, the distance between lenses should not exceed three inches for all ordinary experiments in stereoscopic photography.

In all instruction books accompanying stereoscopic cameras, will be found a caution in regard to reversing the negatives when the prints are made, or reversing the prints before they are mounted.

Apparently a lack of imagination in those who write books on stereoscopic cameras is responsible for the lack of explanation of the reason. However, that may be, the caution is necessary and such instructions must be followed to the letter.

The reason for reversing the position of the prints is this: In making stereograms, what is wanted is two pictures of one object made from different standpoints. These two pictures are made to appear as one by means of the optical viewing instrument, which we call the stereoscope. It is obvious that the picture made with the right-hand lens of the camera should be viewed by the right eye through the right-hand lens of the stereoscope. The picture made with the left-hand lens of the camera should be viewed with the left eye through the left-hand lens of the stereoscope. All cameras impress the image on the plate or film upside down. The top of the object in nature is at the bottom of the plate in the camera. If there be two pictures on the plate and one turns these pictures right side up by the simple process of turning the whole negative around, it is obvious that the picture taken by the left-hand lens of the camera becomes the right-hand picture in the print.

It is, therefore, necessary to cut stereographic prints apart when both are made from one stereoscopic negative, and reverse them as to right and left position when mounting. To overcome this annoyance, printing frames have been devised which shift the paper on the negative, printing the right-hand negative at the left-hand end of the strip of paper and *vice versa*. It makes



"A LITTLE CHILD SHALL LEAD THEM"
© GERHARD SISTERS, ST. LOUIS, MO.



"THE LITTLE MOTHER."
GERHARD SISTERS, ST. LOUIS, MO.

no difference in what way this reversal of pictures is accomplished so that it is accomplished.

Failure to reverse the pictures will give what is known as a pseudoscopic result, which is neither beautiful nor useful. Pseudoscopic pictures stand *in*, instead of standing *out*. This at least is the theory; as a matter of fact, our power of imagination and the way in which we are accustomed to look at objects comes into play with the result that a part of a pseudoscopic picture "stands *in*" and the rest of it stands still—neither in nor out.

Thus, in making a stereographic picture, for instance, of a man standing on a path in front of a house, it will, if viewed pseudoscopically, appear, perhaps, as if the man stood on a path beyond the house. Some other portion of the picture, trees, fence posts or perhaps bushes at the side of the path may appear without relief of solidity, as do those in an ordinary photograph.

The most vital thing in making stereograms is to be certain that the negatives have been reversed, or the prints shifted, if made from a single negative.

The next most important thing for the new stereographic operator to realize is the necessity of a strong foreground. Stereograms made of far-distant objects are seldom successful, for the reason stated in regard to the extent of normal stereoscopic vision. It is, however, remarkable how far stereoscopic vision appears to go in a photograph if we only help our imagination by a good, strong foreground! By a *strong* foreground is meant one in which objects are close to the camera. Thus a picture of a garden may appear as not at all stereoscopic even if made with a stereoscopic camera. But put a gardener in the foreground, or have a bush or tree or some other object reasonably close to the camera, and the whole picture will at once assume an appearance of reality, of solidity; in other words, stand out stereoscopically. This need of a strong foreground is one of the reasons why the experienced stereoscopic photographer so often turns his twin-lenses upon interiors, upon still life, upon children at play or groups of people rather than upon landscapes proper.

If a distant view is desired, the only course open to the photographer is the use of an increased lens separation, and that, as has been stated, often results in a model or miniature appearance in the resulting picture.

It is necessary that the stereoscopic photographer look well to his high-lights. Unlike the ordinary single lens picture, strong high-lights or large patches of light or brightness are not permissible in a stereograph. If such patches of light or brightness are included, what is known as a "snowy" picture or "woolly" picture results.

Stereograms are, therefore, the better for being fully exposed and slightly under, rather than normally, developed. Prints also should be fully exposed and developed softly. It is quite astonishing to those accustomed only to ordinary photographic work to learn to what extent flatness can be permitted in making stereograms. Details, which are almost entirely swallowed up in flatness in stereographic prints, stand out with quite startling distinctness when viewed with the stereoscope.

In mounting stereographic pictures it is essential that they be upon the same horizon line. If both negatives have been made at once upon one strip of film or plate, this condition of course will be obtained. Frequently, however, a careless trimming will result in one or the other pictures being off the center. In the stereogram this results in a confusion, which may be simulated in the normal vision by pulling the eyelid of one eye so that it does not look horizontally. The result is, of course, a disagreeable blur.

I have been asked whether it is not possible to make a stereogram by taking duplicate prints made from a single negative and mounting them side by side. Many do not understand why the answer to this question must be a most emphatic "No!" A little reflection, however, will show that two pictures made from the same negatives are but two exactly similar views as seen by a single eye. Putting them together on a piece of card-board, and looking at them through a stereoscope, cannot alter this fact. It is necessary that the two pictures of a stereogram be made from *two viewpoints*. The stereoscope itself is nothing but an instrument in which two prism-like lenses bend the light rays from the two pictures so that our two eyes see the two as one picture.

These, then are the essential things in stereoscopic work:

First, if a single camera only is used, be sure that two views are not made at a greater distance from each other than three inches.

Second, be certain that the prints of the two negatives, whether on two different or the same plate or film, are properly reversed when mounted.

Third, see to it that some prominent object or objects are in the foreground, if a first-class stereographic result is wanted.

Fourth, be sure no very brightly-lit object is in the picture. If such brightly-lit object is present, as, for instance, the reflection of water, a white house among green trees, and it is not possible to avoid it, it is possible to avoid the resulting "woolly" effect by slightly "sunning down" or degrading the prints. The softness or flatness which will result would be very disagreeable in ordinary photographs, but, as has been stated, flatness in a stereogram is by no means undesirable.

Fifth, be sure the prints have the same horizon line; in other words, are so mounted as to have exactly the same amount of foreground.

It is for want of an understanding of the elemental principles which underlie this fascinating branch of photography, that so many beginners fail. There is nothing more complicated in stereoscopic photography than in any other branch of the art. All that is required is knowledge of *why* certain things must be, and the slight additional care needed to be sure conditions are right.

With these things in mind, there is no reason why anyone who can take an ordinary photograph cannot make a successful stereographic picture. Those who have once tried the twin-eyed camera and the stereoscope seldom go back to the mono-eyed instrument until they have exhausted both their pocket-books and their time in making photographs which really appear as Nature does—in three dimensions!



"HOME PORTRAIT." CHARLES H. DAVIS, NEW YORK CITY



"STUDY." MABEL COX SURDAM, TORONTO, CAN.

MAKING TANKS FROM SPOUTS— WESLEY HEEBNER

THE commercial houses doing amateur finishing, wash films in large tanks having a capacity of many gallons of water. These are all right when a large number of films are to be washed at one time; however, many finishers have occasions when they have only a few films to be washed at a time, especially on dull winter days, when the amateur photographers are not thinking of taking pictures, and when it would not be economical to use large quantities of water on so few films; hence, the advantage of small tanks.

Again, there is a number of photographers who have films brought to them to be developed, but who do not go into this line of work on a large enough scale to purchase tanks. In fact, there are many photographers to whom the small tanks will be just the thing, even to amateurs who develop their own films.

Such a tank may be constructed by your own tinsmith for a small sum of money. Go to him and have him cut out a piece of galvanized spouting as long as you wish the tank to be deep. Forty inches long will make a tank deep enough to accommodate a six-exposure post card film—which will be deep enough for all practical purposes. Spouts are made in various sizes, so select a size which will be right for your amount of work. A two by four inch spout will accommodate from one to three films at the same time. The spout should be at least four inches wide, so that the Kodak film developing clips will fit into it. These clips are three and a half inches in width, so a four-inch spout is the right width. The thickness of the spout required depends on the number of films to be washed at one time. A two-inch spout will accommodate three films at a time, a three-inch spout five films at a time, a four-inch spout seven films at a time and so on. A square or rectangular spout is required, of course, instead of a round one.

When the spout is cut the right length, have the tinsmith close up one end of it by soldering on a piece of galvanized iron. If this galvanized iron is about eight by eight inches square, and the spout soldered on to the middle of it, it will enable you to stand it upright without braces or supports.

About an inch from the bottom of this tank have a small hole cut and a tube about an inch and a half long by one-half inch thick soldered to it. A hose is connected from this tube to the faucet. I had a complete tank made like this for seventy-five cents.

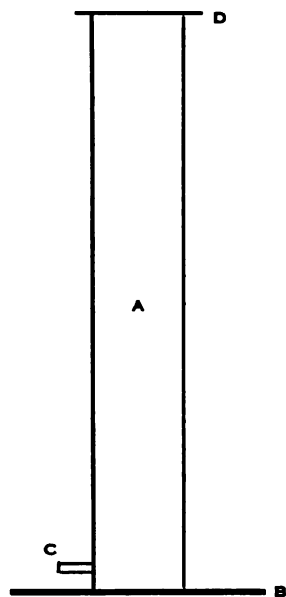


ILLUSTRATION No. 1

- A—Spout
- B—Galvanized Iron
- C—Tube for Connection to Faucet
- D—Wire

A Kodak film developing clip is attached to each end of each film and the films to be washed are hung in the tank. When the faucet is turned on, the water enters at the bottom, gradually rising to the top and overflowing. But very little water is required and a number of films may be thoroughly washed in from ten to thirty minutes, depending on how far the faucet is turned on.

The best way to hang the films in the tank is by passing a wire through the film clips and letting it rest on the sides of the tank. If a block of wood is fastened on to the wall the same height as the tank and two screw-eyes fastened into it, the wire can be passed through the screw-eyes and allowed to project over the tank at any distance, so that the films may be hung on the wire—one at a time—without lifting the other films out of the tank. (See illustration No. 2.)

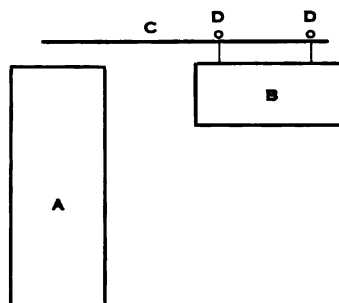


ILLUSTRATION No. 2

A—Tank
B—Block of Wood
C—Wire
D—Screw-Eyes

Such a tank may also be used for developing and fixing as well as for washing films. Of course, three different tanks are needed. These for developing and fixing are a little different, however, than the one just described for washing. These two tanks consist simply of the spouting soldered on to the galvanized iron—the small tube near the bottom being omitted entirely. Also, since they are to contain acids, they should be painted on the inside with a good preservative paint which is acid and alkali resisting—such as Probus enamel or asphaltum varnish. Inasmuch as the tank is deep and thin, it will be impossible to apply the paint with a brush. However, if a half-pint or so of the paint is poured into the tank, and the tank tilted forward, allowing the paint to run outward to the top of the tank, a whole side may be coated at a time. Then the tank is again placed upright and turned on another side, and tilted forward—thus proceeding until all four sides are thoroughly coated. The paint not used may be poured back into the can, and the tank placed aside for several days, when it will be ready for use.

If the solutions are kept covered—in order to prevent evaporation—a tank full of developer and a tank full of fixing bath will develop and fix a large number of films with the least amount of work and solutions possible.

The main features of these tanks are their cheapness and the small amount of solutions required, so that no matter how small the number of films to be run through, they may be finished easily and quickly.

ARCHITECTURAL PHOTOGRAPHY— EDWARD LEE HARRISON

FROM the point of view of the architect, the average professional photographer is a great evil. Occasionally, an artist in his craft will undertake the production of pictures of architectural subjects with great success, but there is ground for the opinion above mentioned.

The writer, himself an architect, intends to present a brief statement of the qualities desired in the photography of buildings for display purposes, together with an outline of his own method of working.

One point should be emphasized at the outset. The picture is the thing. One may have many cameras, and bankrupt himself buying lenses, yet miss the mark.

Of course there are special subjects demanding special cameras, but generally speaking, a first-class negative made with a good hand camera, will furnish a basis for an excellent study. For his own part the writer uses a Vest Pocket Kodak, equipped with an anastigmat and a rising front.

First and last, the rules for the successful composition of an architectural subject are the same as those for the designing of the building itself—scale, unity and balance.

The first question to be answered by the finished picture is, Does it adequately portray the building shown?

To judge by some of the work offered it would seem that the photographer considered his full duty done if all the bricks were clearly shown, and the building did not lap over the edges of the plate.

In designing a building the architect considers the surroundings as a part of the finished work. So must it be with the picture of that work.



COLONIAL RESIDENCE—DISTANCE VIEW. E. L. HARRISON

The second question is an entirely different and much more difficult one, yet if we are to place photography among the fine arts, it is equally important.

Does the photograph make a picture? Has it a place among other works of art? Is it intrinsically good? If not, the photographer remains a mechanic, and deserves no place among the masters of his craft.

Of course, there are architectural subjects which are wholly bad. These we pass by, artistically speaking, making such records as financial reasons dictate.

But where a building is good and the surroundings indifferent, while no masterpiece may be possible, yet the master of composition may do much to present it in a pleasing way.

A word here concerning those who make it their boast that they never expose but one plate to a subject. There is no genius so great as that of hard work, and good fortune alone can assure the success of the first effort.

In an Eastern city there is a certain beautiful building so unfortunately situated as to seemingly defy the cleverest workman. Yet the problem was finally solved by a young and ambitious artist, who caught the scene when the hard lines and ugly profiles of the sordid surroundings were subdued by the mysterious shadows of twilight. The picture has been an inspiration to many.

The general rule concerning architectural subjects, to catch them in full sunlight, has for its purpose the accentuating of the design by cast shadows. This need seldom be broken, yet there are buildings impossible except in shadow, such as, for example, a white glazed façade with a very dark base. Such a subject was recently splendidly treated by an artist who handled the building in entire shadow, and the street in sunlight. Naturally, such a treatment requires a lens of considerable speed.



SPANISH RESIDENCE. E. L. HARRISON

Successful interpretations have been made in the sun, in the rain, on cloudy days, at sunset, and at night. Each case is a problem in itself, and will reward the student in proportion to the thought expended.

The writer mentioned before his use of the small hand camera. For street scenes and objects of widely different distances from the point of view, the short focus lens presents distinct advantages. If rightly used, very good perspective may be rendered.

Regarding the actual finishing of the picture, many successful methods have been devised. There are artists who scorn to depart from the natural and beautiful lustre of an enlargement upon a first-class glossy paper. There are those who see no beauty like unto the deep and mellow effect of sepia. Beautiful effects are rendered in oil, and there are many good things done in water colors.

Most of the writer's work is enlarged on rough surface bromide, or similar paper, and carefully colored in somewhat soft tones with transparent water colors. A good frame, well balanced, with perhaps a touch of gold next to a broad white mat, helps many otherwise imperfect efforts, to a place in the sun.



COLONIAL RESIDENCE—DETAIL VIEW. E. L. HARRISON



"IN MY STUDIO." CHARLES H. DAVIS, NEW YORK CITY

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

SILHOUETTE EFFECTS IN LANDSCAPE WORK

THE print "Landscape" is the result of an exposure on a late afternoon in August with a No. 3 Empire State 5 x 7 view camera and a 9-inch Verito lens *f*4. It is the simplest solution of a silhouette composition as applied to landscapes—the juxtaposition of a darker mass against a lighter one. Everything depends on the relative proportions of the contending masses and their division line. The details, no matter how interesting, are drowned in the general tonality.

The print under discussion is a good example of the rectilinear scheme, a vertical tree-form and a straight horizon line against a middle tint sky. It is a device that will always yield a satisfactory result. Of course, the vertical shape has to be well placed, but it really does not matter where it is as long as it is not exactly in the center.

In a silhouette effect the outlines that determine it must be very distinct and precise, and they must dominate the entire composition. In the "Sandy



"LANDSCAPE," DONALD C. FITTS

Road" we also notice silhouette effects, but they do not furnish the main point of interest. As the title indicates, it is the road which gives the special pictorial value. The tree-forms lack distinction, and there are too many without any showing particular predominance.

It was taken at noon on a hazy day in September, and the mechanical mediums were a 4 x 5 Graflex, and a Verito *f*5.6 lens.

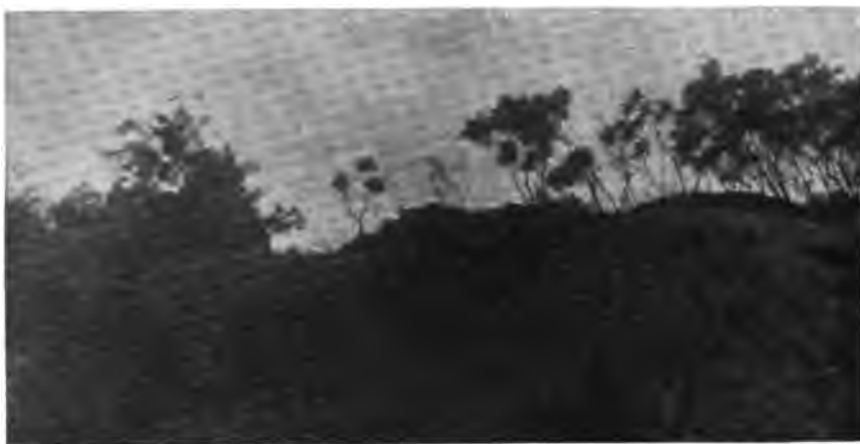
Silhouette effects convince and convey their pictorial significance by their simplicity. It is really nothing more than *contrast*. The eye comprehends the meaning at one glance. There is nothing to explain. If there is harmony of division the design will make a favorable impression, but if there are any disturbing elements—a break in the division line—we will at once become conscious of it and discard the effort as a failure. This is one of the shortcomings of the "Sandy Road." It is composed too much like a silhouette effect without upholding the main characteristics of such a device.

Still, this does not mean that the controlling outline has necessarily to be of a simple nature. It can be as intricate as in "Where the Winds Blow." This, as unpretentious as it may seem at the first glance, is not far from being a masterpiece. There is no detail of any importance, and the play of gradations is absolutely lost in the foreground as well as in the sky. The two contending planes possess only that vibrancy which is necessary to bar monotone tonalities, but they are divided by a design that is not merely interesting in shape but that conveys the sentiment of twilight and a breezy day. A cloudy afternoon in August furnished the setting, and a 9-inch Verito lens *f*4 in a view camera was apparently the best means to record it.



"SANDY ROAD." DONALD C. FITTS

It was not an accident. The photographer had the idea in his mind for a long time. He made many experiments. He realized that an exposure earlier in the day would give too harsh an effect, and that the vibrancy of the sky, which after all gives to the print its particular charm, could only be gained in a cloudy but luminous atmosphere. To secure a pictorial incident of more than ordinary value, it is absolutely necessary to have a distinct idea in mind, to select the right place, to discover the most favorable viewpoint and then to experiment with lenses, cameras and weather conditions until you have prepared the way for the one successful exposure.



"WHERE THE WINDS BLOW." DONALD C. FITTS

PAPERS FOR BEGINNERS—CONTINUED

AMONGST the earliest-tried combinations of lenses to correct the inherent fault of distortion was a plano-convex achromatic, to the rear of which, and at a very short distance from it, was placed another achromatic lens less in diameter, and made up so as to be virtually a concave lens. With a combination such as this, it is possible to have a back lens so adjusted to the front one as to cause the oblique pencils of light to be larger than the central ones, and in this to approximate what is called a flat field. The uncorrected lens would bring the image to a focus upon a curved field, just as our eye with its practically uncorrected lens brings upon the retina, which is a curved surface, a distant image.

But a curved surface is photographically impracticable, and to have uniformity of sharpness all over the field it would be necessary to have the ground-glass concave. You see why it is that an ordinary lens comes to a focus on a curved field and makes the parts of the focusing screen outside the center blurred, and you will therefore understand why it is necessary, in order to get a uniform focus with a lens not corrected for flatness of field, that one is obliged

to focus the image between, so distributing the focus. Absolute flatness of field by a lens, we might say, is an impossibility, due to the shape of the lenses—the field of all lenses being more or less curved, concave toward the lens.

But practically, the best modern lenses are so corrected that if used with the proper aperture we have to all intents and purposes a flat field. In Fig. 1 is shown a curved image of a straight object—uncorrected lenses would give this straight object saucer-shaped. You can readily see the disadvantage of this in reproducing objects by the camera. As we have in our ground-glass screen a flat surface it would be impossible to get a sharp image.

Take the plane of the object, say at C. Here we would get only its center sharp, while in the plane A we would have only the margin in focus. The intermediate plane, B, would be only medium sharp.

Of course, by stopping down and getting depth of focus we might get an average focus where the image would be tolerably well defined. But reduction of aperture means loss of speed in the lens, and so the optician has used other means for getting flatness of field without diminishing the working power of the lens.

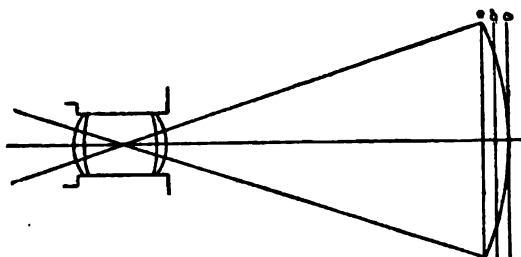


FIG. 1

It would be out of place here to describe the structure of the lens to secure flatness of field, but remember that the depth of focus of a lens varies with its aperture and the distance of the objects which form the image at its focus. It varies also, according to the form of the lens or the optical combination. Convergent meniscus lenses have the greatest depth of focus when their concave face is towards the objects.

The term "rapidity" as applied to lenses is apt to occasion ambiguity. It is generally conceded that any combination which includes a moderate angle of view (two-thirds the focus) with an aperture $f/10$, free from distortion, is entitled to the designation "rapid." According to their construction and covering power, rectilinear lenses are denominated "narrow," "medium" and "wide angle lenses."

But sufficient for the nonce. We will take up the angle of lenses later on.

We may find it necessary in treating of lenses to be somewhat prolix and verbose, and even tautological, but there is so much misunderstanding with the beginner that we plead nothing in extenuation. We want to make the subject as clear as possible.



**"IN THE FOREST." FIRST PRIZE IN THE BEGINNERS' COMPETITION FOR JUNE
WM. H. NITZSCHKE, D. D. S., RIO DE JANEIRO, BRAZIL**

The general effect is rich and pleasing and the rather unusual lighting novel and refreshing. The figure is well placed and concentrates the interest on the subject. The touches of highlight are brought into judicious contrast with the dark parts. The spacing is also well considered. A highly commendable piece of composition, and remarkable as the work of a beginner.



**"HAPPY FISHER LADDIE." SECOND PRIZE IN THE CAMERA COMPETITION FOR JUNE
C. F. RICHARDSON, PORTLAND, OREGON**

A well-thought-out subject, at once attractive and pleasing. The expression of the boy is delightful, and the character of the illumination serves to well interpret the motive. The spacing of the figure shows good taste and judgment, and the association of the background gives a nice artistic relief to the model. The drapery is also properly treated.

TALKS ON COMPOSITION—THIRD PAPER SADAKICHI HARTMANN

DIVIDED POINTS OF INTEREST

WE are all acquainted with the etchings of extreme long size that we encounter in so many homes and hotel rooms. It is such an unusual size that it is almost impossible to obtain any satisfactory pictorial results with it. There is no unity of effect, and the interest is always divided. There are too many "points of interest"—the road, the cottage, the village in the distance, the two sheets of water and the various tree-forms. There is enough material for several pictures in each of these compositions.

This error of divided points of interest should be most carefully avoided by every picture maker. It is apt to spoil the very best of efforts. No matter how clear and pictorial a record may be, it is not convincing if it does not convey any concentration of interest. (See Fig. 1, page 456.)

In Fig. 2 we have a simple scene of a little farm-house and a fence, and yet the eye wanders restlessly from house to fence. The composition is good in so far as the lines of the road and fence lead up to the house, and this or-



FIG. 2

dinarily would make the cottage the main point of interest. In this instance, however, the fence is too prominent. The reason why this is so, is at the first glance difficult to discern. The parts of the house seem to be as manifold and even of greater pictorial interest than the fence. Why then should it attract more? I do not say it does, I merely say that it is *too* prominent. And this is due to the uniformity of parallel lines in the fence. When two objects occupy about the same space in a picture area, the one that is more quiet and monotone will win out. If the cottage were seen more in perspective, the fence would be most prominent; the opposite would occur if the fence was still less in perspective than it is now.

In Fig. 3 there are three points of interest, the brook disappearing in the woodland should have received the main attention, but the two contending tree-forms interfere. The diagonal placing of the three points of interest helps a little, but only the elimination of one or the other group of trees would have made a better picture. A too symmetrical placing of objects at about the same distance from the upright margins always results in a divided interest, unless it is treated strictly in the decorative manner, but that implies less realism and a more suppressed photographic expression.



FIG 3

The selection of one decided point of interest is as much a mental as a pictorial process. Whenever we concentrate mentally upon an object we will necessarily be forced to devote the principal care to its representation, and unconsciously begin to subordinate the parts of minor importance. The brook in this picture furnished the pictorial motive, and the sheen on the water would have been perfectly balanced by the bright tree-trunks to the right. The tree-forms by themselves, on either side, were not of sufficient importance to yield the main attraction. Thus they had either to be subdued considerably or eliminated on one side.



'JOHN' FROM THE CAPITAL CAMERA CLUB, WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION. EBERT K. BURLEW, WASHINGTON, D. C.



"THE VILLAGE COBBLER." FROM THE CAPITAL CAMERA CLUB,
WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION.
MISS MABEL H. BICKLE, WASHINGTON, D. C.

THE PHOTOGRAPHER'S HANDS— A. E. BAWTREE, F. R. P. S.

AT first sight, early springtime would hardly be thought to be the most suitable period of the year in which to bring forward suggestions for the remedy of troubles usually associated with winter-time, but the fact is that the most trying portion of the year, so far as the effect of weather upon the photographer's hands is concerned, is yet before us. Harsh winds play havoc with skin rendered susceptible to them by immersion in cold water, and I feel sure that these notes, based upon personal experience, by which I have overcome some very distressing ailments, may prove of general use to my fellow-photographers.

The commonest trouble is that of chapped hands, commencing with a mere roughness, developing into open cracks and bleeding patches, and often including the most distressing and extremely painful feature, consisting of deep cracks, extending across the tips of the fingers from the quick of the nails.

I do not profess to know anything of the medical opinions as to the cause of these troubles, but it appears to me that chapped hands are really a sort



"LOADING HAY." FIRST PRIZE AWARDED IN THE CAMERA COMPETITION FOR JUNE
CHARLES H. BREUER, LINCOLN, NEB.

A charming little pastoral, which reminds one of the beautiful vignettes of Birket Foster. The grouping is particularly good. The suggestion of movement is fine, not only in the human models, but also in the oxen. There is a nice balance of light and shade and proper contrast of lines, which make the composition effective.

of cold in the skin, to be avoided by the usual preventive of cold, namely, warmth. Water in evaporating produces cold, as exemplified in the common butter-cooler, and hands left damp are also left subjected to this cooling operation, in addition to the chill already inflicted by the cold water. The carelessness of even expert photographers in this matter is quite remarkable. A number of men of some note have been into my dark-room, and have remarked upon the luxury of a real towel hanging upon the wall. Most operators seem satisfied with a handkerchief, their coat-tails, or simply—nothing. Two dark-room towels should be provided, one in use and one at the laundry, and should be changed fortnightly. They should be of smooth, fluffless, huckaback type, without fringes, hemmed strongly at the ends, and with a loop of tape sewed in the center of each end. Roller towels are undesirable. They take up too much room, and offer horizontal surfaces at top and bottom, which collect dust for subsequent transference to negatives and prints from the operator's hands. The towel should be suspended from a brass—not iron—hook at such a height as to bring its lower half level with the photographer's chest. The hook should be about a foot from the angle of a wall, and on the adjacent wall there should be another hook at such a distance that the lower



"EVENING SHADOWS FALL" THRD PRIZE IN THE CAMERA COMPETITION FOR JUNE
LAWRENCE BAKER, MARIETTA, OHIO

The sentiment in the landscape is feelingly expressed, and the general management of the composition contributory to the motive. The elements are few, but so associated as to give an idea of considerable extent of country, and the curve in the roadway leads the eye into the distance and suggests continuation. The treatment of the trees is particularly good.



"THE OLD FIDDLER." FROM THE CAPITAL CAMERA CLUB,
WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION
GEORGE WEDDERBURN, WASHINGTON, D. C.



"A VIRGINIA ROAD." FROM THE CAPITAL CAMERA CLUB,
WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION
THOS. B. GARDNER, WASHINGTON, D. C.

loop on the towel can be fixed over it, and the towel held horizontally for drying purposes after the day's work is over. Such an arrangement exposes a mere edge of horizontal surface, upon which little dust can collect. If in a day's work the conveniently placed lower end of the towel gets too wet, hanging it upside down will bring the dry half into the useful position. The towels should be washed frequently.

The next requisite is a bowl of hot water always at hand. You may consider me extravagant, but I keep an enameled iron bowl always hot upon a tiny gas-jet. An excellent substitute is to be found in a heavy, brown, stone-ware crock filled with very hot water. This will keep warm enough for several hours—probably as long as the operator is likely to be in the dark-room at one time. Whenever the hands are not to be put into water again for a few minutes, immerse them in the warm water to remove the chill, and then dry thoroughly on the towel. By the way, remember that it is a towel, not a dishcloth. Keep something quite separate for wiping out dishes, measures, and so forth.

Rubber gloves and finger-stalls are to be entirely eschewed. I tried these, from the costly surgeon's operating gloves to the clumsiest, cheap, rubber finger-stalls. Water usually gets in at the backs, but if it does not,



"IN THE HEART OF THE GREEN MOUNTAINS." SECOND PRIZE IN THE BEGINNERS' COMPETITION FOR JUNE. J. V. BROOKS, MONTPELIER, VT.

A fine panoramic picture and an excellent landscape composition. The horizon properly selected as to height, so as to give the dignity of the mountains. The treatment of the sky is particularly good, and the contrast in the interesting foreground well considered.

perspiration accumulates in these rubber articles. In any case, the effect is that the skin is perpetually wet and as much chilled with external cold water as if it were uncovered. A much better method of avoiding stains is to use plate-lifters for plates and forceps for prints. These should not be laid upon the bench, where they both deposit and pick impurities, but should, when not actually in hand, be dropped into a small white porcelain dish of clean water. This can be readily seen in the dark-room, and keeps the appliance always clean for use. Also it may be mentioned that there are very few stains, including even strong dyes, which cannot be removed while fresh, with a solution of three parts of methylated spirits and one of hydrochloric acid, rubbed on with a tuft of cotton-wool, the hands being then rinsed in water and carefully dried.

Preventive measures are of great assistance. Most operators share with me a horror of the scented preparations of the perfumer, and fortunately can well dispense with them. By far the best preparation is cheap, odorless, and easily mixed at home. In an 8-oz. medicine bottle, place 2 ozs. each of lemon juice, olive oil, and glycerine. Room must always be left for shaking. This amount costs about 15 cents, and will last a year. About 15 minims should be rubbed well into the hands (not forgetting the wrists and well in between the fingers) after the day's work, and again at bedtime.



"VIEWING THE RAMAPO." THIRD PRIZE IN THE BEGINNERS' COMPETITION FOR JUNE. T. W. LINDSELL, BROOKLYN, N. Y.

The principal feature of attractiveness is in the figures; they are placed in the scene just in the proper part to give the necessary balance to the picture. The distance approaches too much, and of consequence the aerial perspective is not secured and we lose the suggestion of atmosphere.

With the foregoing precautions all the ordinary troubles of chaps and chilblains due to photographic operations should be quite avoided, but the distressing cracks in the finger-tips are usually constitutional, and call for special care and treatment. As a preventive, place a little vaseline in the palm of the hand, and thoroughly work the finger-tips of the other hand into this, finally wiping off all removable excess. This should be done before commencing work each day. For the best cure for the trouble, when such cracks have opened up, I am indebted to a surgeon, who finds that the false skin described is sufficiently strong to withstand the severe washing necessary in order to sterilize the hands for performing an operation. Any druggist will make up the preparation. In a $\frac{1}{2}$ oz. bottle place enough celloidin shavings to fill it to about one-third, and fill up with two parts of ether to one of alcohol. Shake occasionally, and in a few days you will have a viscous or almost gelatinous solution. A matchstick should be stuck into the inside of the cork, reaching nearly to the bottom of the bottle. The well-washed and thoroughly dried finger-tip, upon which there is a fissure, should be covered with this preparation, the crack itself being filled in with two or three coats, which takes less than one minute to set. Before replacing the cork after use, smear a little of the preparation round the neck of the bottle inside with the stick, in order to form a seal and prevent evaporation of the very volatile contents.—*The Amateur Photographer and Photographic News.*



"WINTER." FROM THE CAPITAL CAMERA CLUB, WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION. CARL H. KATTELMANN, WASHINGTON, D. C.

THE EXPRESSION OF THE EYE— JOHN BARTLETT

MOST of us have seen the pictures in the manuals of physiology in which the same face is made to look grave or gay by simply changing the expression of the muscles around the mouth, the endeavor being to prove that the eyes have nothing to do with the general expression of the face. While there is no gainsaying the fact that emotion is centered in the muscles which control the movements of the mouth, that sadness or mirth is signified by a downward or upward tendency of the lines of the muscles; that the whole character of the face may be changed without affecting a change in any feature by altering the flexures of the mouth, still, we maintain that, seeming passive as may be the eyes, their relation to the face and their position in its pose, contribute to, if they do not materially influence, the facial expression.

The signature of character through the agency of the mouth is in a great measure dependent upon the skill of the operator. It is more immediately responsive to his influence in the effort to get the wished-for effect, though most unruly to the personal effort of the sitter, whereas the expression of the mental state of the subject before the camera, through the agency of the eyes, is wholly independent of the personal effort of the sitter himself.

The expression, as indicated by the eyes, is wholly dependent upon the connection with the posture of the body, which the will of the operator may



"THE FIRST SNOW." FROM THE CAPITAL CAMERA CLUB, WASHINGTON, D. C.
TWENTY-SECOND ANNUAL EXHIBITION. J. M. MCLEOD, WASHINGTON, D. C.

mechanically select, the sitter all the while being totally ignorant and therefore unconscious of the effect produced.

What we really are trying to say is this—it is admitted that beauty of expression—or ease or grace or naturalness, whatever you may call it—is only possible when we divorce the sitter from his or her self-consciousness. The moment one realizes that the act is about to take place which shall permanently fix the impression, that peculiar nervous action takes place which results in giving the uncharacteristic and ungenune expression of the individual, the features, through the controlling muscles being summoned to the ordeal, marshal themselves to the attitudes they are not wont to assume under the ordinary conditions, and so are necessarily strained and unnatural. Self-consciousness is, therefore, the great destroyer of beauty or ease of expression, and it is the mouth with its surroundings which is the prime instigator of this unnatural expression, because of its peculiar mobility and quick response to nervous action.

Every operator who has not specially determined what shall be the direction of the eyes in his picture is often surprised, sometimes agreeably, oftentimes disagreeably, with the result in the finished work, and this surprise is the contribution made by the eyes by the position they have involuntarily assumed.

In truth, we are all aware that every portrait has an expression through the eyes, and we could wish for some guidance by which constantly to secure the longed-for effect, that effect which gives to the picture its naturalness of expression.

It is admitted that a face may be made to look shy, silly, bold, conceited, ill-tempered and morose; instead of animated, thoughtful, good-humored and amiable, by the character of the illumination; but in many cases, despite the best thought-out scheme of illumination and the most studied method of posing, faulty or undesirable expressions may be traced to neglect to observe the proper relation of the eye direction to the rest of the face.

Can any fixed rules be formulated for securing artistic eye expression?

We admit it is difficult to mechanically demonstrate a way of getting artistic effect. We like to think that beauty of expression is dependent rather on the personal equation and as evidence of mental or spiritual possession by the artist; but even granting this as the truth, which all great art only more and more substantiates, is it not, after all, through peculiar mechanical manipulation, guided by the intellectual or spiritual agency, that the effect is produced?

It may savor of Philistinism to say that expression is at least in some measure dependent upon mechanical manipulation, but we think it may be shown.

Suppose a sitter is placed directly opposite the camera, with the face in a line with the lens and to be directed to look at a point about 25 degrees to the left, he will naturally turn his head toward the right, because that is the most comfortable way of viewing an object so placed, the lines of least resistance for his muscles.

Now note the difference in expression thus produced from that assumed when the head was front to the camera and the eyes directed straight to the lens. The face is at once transformed; instead of the dull, listless, impassive look, the face with the eyes slightly turned, assumes animation and the expression appears natural and, at the same time, graceful, and all without the least consciousness of any contributory effort on the part of the sitter, or through any direct influence from the mentality of the operator. He, the operator, has made a mere mechanical manipulation and thereby called forth the much-improved expression; but let him take credit to himself for having mirrored in the face of his sitter his mentally evolved expression.

Effect is also produced by turning the head in a direction out of the vertical to the lens, while the eyes are directed to a slight angle to either side or to the line of the camera itself. The same rule holds good for looking up or down with the eyes in relation to unaffected position of the head.

There are limits, of course, in the direction which the eyes must assume, and it is quite possible to produce startling or unnatural and weird expression by too great deviation from the normal of head, body and eyes, and just here comes in that play of mental prerogative in controlling the execution of a mere mechanical device.

I am not such a Philistine as you think. I merely wish to call more especial attention to the value of the factor played by the eyes in posing, which some of our best photographers are wont to disregard.

Let me emphasize this—that control is possible to have in expression by observance of seemingly slight and unimportant variations; and also the potent means the photographer has in depicting emotion in the face which will enhance the character of his work, adding to the charm of a well-conceived bodily pose and beauty of illumination.

THE DIRECT VIEW FINDER— G. H. MCKELWAY

TO anyone who has had much experience with both the direct view and the ordinary mirror type of finder, the advantages of the former type will be understood to be so marked that he will have difficulty in understanding why the latter is the ordinary type and why practically all cameras are not equipped with the other kind, instead of its being on only a few cameras and the mirror type being well nigh universal. At present, practically the only American cameras regularly equipped with the direct view finders are the Speed Kodaks and the little $2\frac{1}{4}'' \times 3\frac{1}{4}''$ Premoette, which has no room in its compactly filled interior for a finder and, therefore, has to have one attached to the outside.

The only disadvantages that can be alleged against the direct view type are, that being placed on the outside of the camera, it takes up a little more room, too much to permit of the camera being slipped into its carrying case as the latter is ordinarily made, and that sighting with such a finder requires

that the camera be held at the level of the eyes instead of against the chest, which is its position when the reflecting type is used. The camera in the former position lacks the support afforded to it by its rest against the user's body, and therefore a shorter exposure has to be made when the instrument is held entirely in the hands.

To overcome the first disadvantage, most of the finders are made with large holes connecting with the smaller ones through which pass screws that hold the finder to the body; then the screws are not tightened up to the limit, but are left sufficiently loose to permit of moving the finder until the screws come into the large holes, when it can be slipped off over the heads of the screws. A still better way is to have the carrying case made so as to accommodate the



"PORTRAIT " FROM THE CAPITAL CAMERA CLUB WASHINGTON, D. C., TWENTY-SECOND ANNUAL EXHIBITION. CHARLES A. BAKER WASHINGTON, D. C.

finder as well as the camera. As previously stated this is not now regularly done, so that a special case is required, but if the direct view finder were made part of the regular equipment, of course the cases would be altered to take the camera with the finder attached. The objection to removing the finder each time is not the bother of attaching and detaching it, which is very slight, nor entirely that when removed it means that there is another piece of equipment to carry around and protect against injury, but that, unless the screws are set up rather tight, there is the liability of the finder shifting after it has been put in place and so not having the image seen through it agree exactly with that which is registered on the negative when the picture is taken.

So far as the second objection (that of having no support other than the hands when using the direct view finder) is concerned, that may trouble no one, because the use of a camera, equipped with such a finder, does not necessitate the removal of the one or the other type and if desired both can be used, suiting the finder to the object to be photographed and using the direct view on the higher speeds and the mirror type with the slower exposures. Some of the direct view finders are furnished with a mirror attached to the finder and slipping under it when not in use. Such a finder, of course, would make unnecessary the mirror type if it could be used in all cases but, unfortunately, that is impossible, because no type that has yet been put upon the market is arranged so that the mirror can be swung so as to reflect the view upward whether the camera is held in either a horizontal or a vertical position. This would be possible by the use of a universal joint at one corner but, as far as the writer knows, such a finder has never been manufactured.

However, many owners of cameras are getting along at present with only the direct view finder, as they find it possible to hold the camera still, at the height of the eyes, for almost the same length of time that they can by resting it against their chests. This is especially true if the elbows are steadied against either the chest, when the photographer is standing up, or against the knee when he is either kneeling or sitting down.

It will be seen from the foregoing that the disadvantages alleged against the direct view finder are almost negligible, while it has the great advantage of showing the image to be photographed much more clearly and in much greater size. If you have ever tried, with the ordinary brilliant reflecting finder, to do any speed work, especially on a dull day or when the object to be photographed blends with the background, you know how very difficult such work is, and can understand why the Speed Kodaks are fitted with the direct view finders. Especially when the object to be photographed passes at right angles to the camera, it is almost impossible to get a good picture, because before it can be plainly seen in the finder it will have passed and the chance will have been lost.

The advantages of the direct view finder are not confined only to speed work. In all cases where it is used, a much clearer image will be obtained, which will permit the photographer to see those little details upon which often depends the entire attractiveness of the picture. When all of the details are

plainly seen, the picture can be carefully composed, the undesirable portions left out or placed where they will be unnoticeable, and the best portions placed where they can be clearly seen and in such relation to the other objects that the eye will be naturally led to them and they will be strengthened and appear at their best. When making portraits the photographer can closely watch the face of the subject and make the exposure whenever the expression is most pleasant.

Occasionally, but very seldom to most people and never to a great many of them, the desirability of having a reflecting type of finder on the camera will be felt when its owner wishes to photograph someone or something without the knowledge of the subject or of other persons who may be nearby and watching. With the direct view finder the camera has to be deliberately aimed at the subject and there is very little chance of anyone misunderstanding whom or what is being taken, while when the mirror type is used the user can face in one direction and point his camera at right angles to the direction in which he is supposed to be looking, and by glancing at the finder can make sure that the picture will include the desired subject, before making the exposure.

However, when the finder, although of the direct view type, includes a mirror he can point the camera just as surely, and even more so than when using the old type, because the image seen in the mirror will be larger. Even if the finder has no mirror attached to it the photographer can, with practice, learn to point the camera properly with only a seemingly careless glance at it and the object to be photographed.

Many such subjects, whom one might suppose would object to having their pictures taken, will be found to have entirely different ideas on the matter and will be pleased to have been thought worth photographing. This applies particularly to children and to foreigners, but there will be found to be many native "grown-ups" who will have not the slightest objection to having a camera pointed deliberately at them and pictures taken, especially if this is done in a pleasant, smiling manner and a word is spoken or gesture made expressing the thanks of the photographer for the way in which the subject permitted the picture to be made.

Many street scenes or pictures of children at play would be spoiled if those persons to be included in the picture were aware beforehand that such was to be the case. If they knew what was going to happen, they would either dodge or else be seen in the picture, not in their picturesque or characteristic attitudes, but staring intently and directly at the camera. Such pictures have to be taken either with the subjects being entirely unaware that they are being photographed or with their being apprised of it so little in advance of the exposure that they cannot change their attitude or expression. While the direct view finder may be at a disadvantage when the picture is to be taken when the subject is in entire ignorance of the fact, yet it is incomparably ahead of the other type in practically all cases, because of the greater clearness of view attendant upon its use, in quickly "picking up" the picture and giving an opportunity to expose the plate before the subjects can change.

After a person has decided upon purchasing a direct view finder there is only one piece of advice that the writer can suggest. "Get as big a finder as can be fitted to the camera." Do not accept the usual ratings of the finders as they invariably give too small a finder. The writer, for instance, uses a $3\frac{1}{4}" \times 4\frac{1}{4}"$ camera but the finder, instead of being rated as suitable for that size, is said to be proper for use with an $8" \times 10"$ instead, and a still larger finder would be used by him if it could be attached to the camera. The great advantage of the direct view finder over the other style is in the size and clearness of the image and that advantage increases directly with the size of the image that can be seen in the finder. The best finder would show the image the full size it would appear on the negative, but such a finder could not be fitted to the side of a folding camera. The nearest approach to this is the wire frame seen on a few cameras and holding no glass set in it. This frame is the size of the picture, but it is not always possible to tell exactly how much of the view through the finder will be seen on the plate or film as the amount seen through the finder will vary according to the distance that the camera is held from the eyes.

THE BEGINNER AND THE PHOTOGRAPHIC MAGAZINE—RALPH W. LLOYD

TO a certain extent all amateur photographers read photographic magazines, but how many of them get their full value. Perhaps some one more learned should be the one to bring up this question. But in view of the fact that no one seems to have written on this subject, I am, therefore, bringing forth my views as per my own experiences.

The front parts of most photographic magazines are given over to illustrations and articles intended for those more advanced in the art of photography. Don't feel discouraged when you find that you do not understand the professional terms used therein. What difference if you know not that a Rembrandt lighting is in most cases diametrically the opposite of a Broad lighting or a violent perspective is undesirable? What need to bother your head about those things at this moment? Read those articles, observe the illustrations and for the time let it end there. Don't try to commit to memory, at once, such a vast amount of facts. Better lay those books away, and later as your knowledge develops you will find them a veritable storehouse of facts and a reference library well worth owning. So don't puzzle over the things you cannot understand, but rather turn to the Criticism Department. That part of the magazine is designed for your especial benefit, for therein you will find a world of knowledge in the criticisms of amateurs' efforts by men who are masters in their chosen art, and also in the helpful hints contributed by learned men the world over.

Then I urge you, if you are not a contributor to this department to get in the swim at the earliest moment. And I urge further (that if your first efforts do not bring you much praise from the Judge), to remember that his pointing out of faults is honest in intention, and will rapidly bring you to a place where your work cannot be otherwise than praised for its good qualities. And when this moment arrives, do not forget that old Mr. Critic, the Nemesis of your amateur days, he who hunted mercilessly and brought forth to the light your tiniest fault, was working only for your own good, not to flaunt his superior knowledge, and that he has helped you to where you are.

In the Criticism Department you will find various illustrations of amateur contributions, together with the criticism of the Editor of that department. What I want you to do is, each month when you get your magazine, to turn to the Criticism Department and without reading anything therein, to take the first picture reproduced for an example, and from every point that your present knowledge enables you, criticise it! Don't hurry! Take your time and try to make up your mind just what you would say were you a judge, and that particular print were submitted for your approval.

On a sheet of paper mark down these faults as you see them, and then compare your criticism with that of the expert. Now I say, mark the faults down because mentally you might have a tendency to renege and say, "Oh yes, I noticed that, but I forgot about it."

At first you will be surprised at the weak spots disclosed, things that you didn't see, and that possibly you never would have noticed had you not placed yourself (for the moment) in the chair of the critic, instead of following the old way of reading the criticism, confirming it by looking at the picture, and then saying to yourself, "Of course, any one could see that," and you will be impressed by the knowledge of those who criticise.

And later, as your own knowledge increases, you may, on comparing your criticism with that of the editor, find that you have judged correctly in at least part of the points under consideration, and then again you may be surprised to find that you have discovered a flaw in a print which you afterwards find the editor has pronounced perfect.

This will be found amusing, and especially so when several judge at once, and all the while it is teaching you the points that go to make up a good picture. In this way I will guarantee that your magazine will afford you more pleasure than ever before.

Now this article is not intended to cast reflections on any one whatever, it is merely a résumé of my own experiences in that way, and which I am writing in the hopes that some one else may benefit by them. And it is intended, further, to warn you against hurrying in learning well the principles of photography, to urge you now to accept entirely the opinions of your critics, even when they conflict utterly with your own views, and further, to urge you to contribute at least one print a month to the Criticism Department, for more prints mean a larger department, aroused interest, more magazines sold, and as a result a bigger and better publication, thereby benefiting all concerned.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.

FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents

TO OUR READERS

SOME few months ago we discontinued our "Question and Answer" department, as fully eighty per cent of the inquiries were individual questions and would be of no absolute use to our general readers.

We do not wish to infer that we will refuse to answer questions. Far from it. THE CAMERA is a magazine for your instruction, and if you want advice, a formula or any other photographic information, send in your request and we will do our utmost to supply your needs. Of course, enclose a stamped and addressed envelope for your reply, but do not get impatient if you do not receive it by return mail. Frequently several weeks may elapse before we can secure the desired information for you.

In our "Print Criticism Department" we wish our readers would either use the data sheet that is printed in THE CAMERA or send us the required information on another sheet if they do not care to mutilate their magazines; or write us for extra criticism blanks. This data is necessary, as it enables us to give better advice, and remedy many difficulties in the matter of exposure, light, development, etc.

Our Monthly Photographic Competitions will, hereafter, be known by the month in which they are entered instead of by numbers as heretofore. In other words, instead of saying "Competition No. 209" for August, the competition will be known as the "August Competition," etc. The same rules and regulations are in force.



FIG. 1. (SEE ARTICLE, PAGE 437)

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1360. *J. H. Massey*.—"Up Grade." The central portion of your picture is the best part. The portions to the right and left, instead of improving the effect, detract from it. The



No. 1361. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Graflex; B. & L.-Zeiss Tessar lens; $f/4.5$; June 7.30 A. M., dull light; 1-60th second exposure; pyro developer; Azo F hard X print.

textural quality of the snow is well expressed, and the position of the train is well thought out to give the idea of progression.

1361. *Wm. H. Quinter*.—"Meal-Time." Quite a pleasing genre picture, well carried out and of good composition. The accessories are well managed. They help to tell the story, and at the same time contribute essentially to the interest of the subject. The perspective is very good.

1362. *A. A. Gifford*.—"The Lone Tree." The picture has considerable sentiment, well expressed; but the contrasts are a little too violent. We think that the tree in the foreground should have had some half-tones, so as not to project it so intensely against the sky; the same criticism is applicable to the immediate foreground.

1363. *Chas. D. Meservey*.—"Study." The tonal value of the photograph is too uniform. Everything from the flesh values of the model to the drapery and even the tree-bark is of one monotonous color. The illumination is unsuited to the subject, and the whole character of the work flat, without a single touch of relieving high-light.

1364. *Louis Beegle*.—"Posing." The portrait is fairly well-lighted for the character of the subject. The pose is somewhat constrained and rather too rigid. The face should be turned a little toward the left. The full-faced presentation makes the nose come out flat and does not do justice to this feature. The background is very annoying by reason of the many distracting incidents in it. The pattern of the wall paper is bad enough, to say nothing of the wholly unnecessary picture and part of a picture. The oval form is extended too far above the head. It causes the figure to have the head directly



No. 1364. *Data*.— $3\frac{1}{4} \times 5\frac{1}{4}$ Premo C; Planatograph lens; U. S. 8; June 4.30 P. M., dull light; flash; M. Q. developer; Azo E hard print.



No. 1367. Data.— $3\frac{1}{4} \times 4\frac{1}{4}$ Ica; Zeiss-Ica lens; f9; April 9 A. M., very dull light; 1-50th second exposure; Eastman tank powders developer; Azo hard medium print.

in the center, which is pictorially wrong. A smaller oval placed so as to have not more than an inch space above the head would not only cut off the unnecessary length of the body, but also give better spacing.

1365. *James Slater*.—"Easter Morn." There is too much formality in the construction. The tulips have such regularity that they demand some counteracting influence, but you have increased the formal effect by the staid and almost painful disposition of the curtains and the rectangular space between them, coupled with the angular association of the window sill, it looks as if the flowers had lost half of their beauty.

1366. *Leon F. Bowes*.—"Hydrangeas." The subject is too confused. The essential feature, the flowers, is not properly brought out and no relief is produced. The hydrangeas are jammed against the background, and so we have no suggestion of atmosphere behind them, nor is the peculiar textural quality of the flowers at all indicated. No variation of light and shade. The character of the illumination is unsuited for floral photography. The photograph has no value, either to the horticulturist or to the artist.

1367. *A. S. Fogg*.—"Off for Sunday-school." The figure would have been better presented minus the umbrella. It only exaggerates the unpleasant mass of black formed by the two girl figures, and besides, destroys the outline, forming a disagreeable, almost square splash of black projected against the snow. We cannot say anything favorable for the general management of the composition.

1368. *Burdette Harrison*.—"The Oaks." Photographic quality poor; merely black and white, without a particle of variation of light and shade. The figure is wholly unnecessary to the subject, which in itself offers no inducement for the pictorial. The character of the oaks is not shown, not even the parts of the tree which would exhibit its good features. The negative is too intense and woefully undertimed. There was no necessity of such a short exposure. A half-a-minute, in a subdued light, would have materially improved your photograph. Give more time and develop more carefully, and you will get something better than this.

1369. *N. H. Schammel*.—"Home Portrait." Quite a pleasing child study, caught at a moment when the childlike characteristics are naturally shown, and attractive for its simplicity. The photographic quality is also good.

1370. *G. W. Philleo*.—"Robert and Laddie." More of the dog should have been included. The abrupt division of the mount is unpleasant, and the regularity of the boards without giving sufficient indication to show what is intended are annoying. The action of the boy is good, but the dog seems to be taking no part in the sport. He is an unwilling participant.

1371. *Merle L. Mesner*.—"A Storm Brewing." The sky, though not particularly pleasing in the way of composition, suggests a



No. 1369. Data.— 5×7 Seneca view; Verito lens; f6; May 2 P. M., good light; about two seconds exposure; pyro-acetone developer; Chloralla soft buff print.

storm; but there is no indication of movement in the trees to suggest the approach of a tempest. The foreground is too blank and monotonous, and the position of the cow throws the picture out of balance. It should have been placed further front and a little more to the center.

1372. *Ralph H. Blohm*.—"Wood Scene." No doubt this scene looked beautiful to the eye, with the delicate gradations of light and shade and the variety of shades of green in the trees and upon the ground, and you deserve credit for your appreciation of it, but such subjects, by reason of the lack of sufficient contrast, do not make effective photographs. It is from the want, too, of contrasts in the lines which must also be considered in the composition. There are too many vertical lines repeating one another.

1373. *Leon Maurice*.—"Low Tide." No attempt at composition. In fact, the subject presents no opportunity for making a picture, and we see no reason why it was selected.

1374. *E. B. Floyd*.—"Flag Raising." We seldom get such a poor piece of work. There is no attempt at composition. The flag, the main feature, is shown at a great disadvantage and the grouping is very bad. The photograph is excessively underexposed.

1375. *Marguerite Balthorpe*.—"The Two Freaks." A humorous subject, and therefore hardly intended for artistic criticism. The



No. 1371. *Data*.—5 x 7 Conley XVI A; R. R. lens; f/8; June 5.45 P. M., cloudy bright; 1-5th second exposure with filter; Duratol-hydro developer; Instanto soft gloss print.



No. 1375. *Data*.—3 1/4 x 4 1/4 No. 3 Eastman; Cooke lens; f/8; September 3 P. M., sunlight; snap; tank developed; Azo E hard medium print.

figures behind the group, especially the bow-legged one, contribute nothing to the subject, which would be better without them. The triangular roof is also out of place. The models, too, might have been expressed with some action. They are immobile.

1376. *I. S. Lovegrove*.—"With the Circus." Interesting for local association, but having little of value pictorially. The photographic quality, however, is good.

1377. *Huber L. Williams*.—"In the Shadows." We think that you might have selected a better point of view, so as to present either the good features of the cottage or the trees. The time of day for such a subject is early in the morning, or late in the afternoon at this season of the year. Noontide is hardly a time to get proper shadows. The sun is too vertical, and shadows are at a minimum.

1378. *George H. Sheaffer*.—"Billie." The management of the group is natural and pleasing; the expression of the babe is particularly pleasing, and the face fairly well-lighted, but the illumination of the mother is poor. A little reflected light would here have told advantageously. The background is not suitable; one of lighter tone would have given more relief to the figures. They would have stood out better from the surroundings.

1379. *S. Ninomiya*.—"Meditation." A very pleasingly posed figure and particularly good in the management of the hands. The expression is excellent, and the whole general



No. 1378. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$. Popular Pressman; Verito lens; $f5.6$; June 9.30 A. M., bright light; 1-20th second exposure; pyro developer; professional Cyko buff print.

effect deserving of commendation. It is rather unfortunate that the abrupt fold of the drapery causes an unpleasant repetition of the line of the arm of the figure.

1380. *H. Clemmons*.—"Poplars Tall." An effective piece of composition with pictorial value. The foreground is sufficiently diversified to call for the extent it shows, and the converging line of the fence gives nice perspective and leads the eye right into the view. The poplars are an additional feature of interest. They are in the right position to give proper balance to the picture. It is unfortunate that the circle of illumination is cut off at the top of the plate. You might have helped matters by judicious shading at the top during the exposure for the print.

1381. *A. Geissler*.—"Amphitheatre, Arlington Cemetery." The point of view is poorly selected, and so the subject gives one little impression of this really beautiful place and its associations. As an architectural photograph it is not good, because it does not indicate the character of the monuments or express their structural quality. Considerable more time should have been given to the subject. The light under which it was taken was too intense.

1382. *Dr. J. C. E. Snyder*.—"Brothers of the Road." The grouping of the horses' heads was necessitated by the conditions imposed, but pictorially there is too much regularity. It might have been possible to vary the attitudes some, so as to make by their combination a more curved line. The repetition of the same lines, caused by the

three heads all in a row, is very unpleasant to the eye.

1383. *C. Schweiger*.—"Evelyn." Although the little model looks a very capable subject, you have not taken advantage of it to give us anything pleasing. The lighting is poor and the position of the baby is not well chosen. The ungainly looking chair, with its angularity, detracts from the general effect.

1384. *C. R. MacCarrick*.—"Outdoor Portrait." The pose is rather good; that is, the inclination of the figure is at the proper angle. The forward limb is projected a little too far front, which causes a slight exaggeration of the size. The background is too dark and projects the high-light of the drapery too much. The lighting and general photographic quality is excellent.

1385. *E. C. Johnson*.—"In the Park." This is not only poor photographic work, but also very poor composition. In fact, no attempt is made to give a picture. All the rules of artistic composition are violated, and the conditions of light under which the exposure was made are the worst possible. We have frequently remarked that the middle of the day and the intense light incident thereto is no time to make a picture, but even under most favorable conditions it would be impos-



No. 1380. *Data*.— 5×7 Century Grand; Planatograph lens; $f8$; June 1 P. M., good light; 1-5th second exposure; Cramer inst. iso. plate; pyro developer; Rexo print.

sible to get anything pictorial from such a subject.

1386. *Waller Cooper*.—"The Rocks." The photographic quality is poor. You have given us a mere black and white, hard and unpleasant presentation of a subject which affords natural features for a pleasing picture. The sky is an absolute blank piece of paper. There is no indication of light and shade in the foliage, and the rocks are hardly distinguishable from the other parts of the photograph.

1387. *H. P. Turrell*.—"The Pond Lily." As the lily was intended to be the principal feature in the picture it should have been more in evidence. It really is the minor consideration. A closer-up view should have been taken and a softer illumination selected. There is too much contrast shown.

1388. *W. M. Tomkins*.—"Curiosity." The right-hand portion of your photograph makes an agreeable piece of composition. The attitude of the figure is particularly good and suggests the title we venture to give. The landscape setting adds much to the interest of the subject, and the management of the perspective serves to carry the eye right into the surroundings. The view would be greatly improved by cutting off an inch or so from



No. 1384. *Data*.—5 x 7 Conley B. S; Isostigmat lens; f/5.8; September 5 P. M., bright light; 1 second exposure; pyro-soda developer; platinum print.

the left side, as it concentrates the attention to a better advantage.



No. 1388. *Data*.—3 1/2 x 4 1/2 Ansco No. 3; R. R. lens; U. S. 16; April 11 A. M., cloudy light; 1-25th second exposure; pyro developer; bromide print.

1389. *E. W. Smart*.—"An Old Cadillac." The position of the "auto" is bad; it should have been taken more at an angle. The photographic quality is also poor. The illumination is too harsh. Your picture is merely black and white; it has what we call a "cast-iron" look.

1390. *Fred Harris*.—"Their Week End." Rather pleasing as a composition, but the grouping of the three figures in the center is poor. One of the group would play a more artistic part placed to the left, to give the balance which the picture needs at this part. The foreground is also too extended, and as it has nothing interesting in it there is no excuse for the exhibition of so much of it.

*

WILD-FLOWER PHOTOGRAPHY RECOMMENDED

"Searching the dark retreats and swampy places of the woods for the rare and beautiful flowers that hide themselves there is one of the most fascinating phases of nature photography," writes William Ruthven Flint in *American Photography* for May.

"Certain requirements in equipment are necessary. A ground-glass screen for focusing and arranging the composition is essential and 'equally needed are the swinging back, adjustable front, and ample bellows length. Nor must the stout tripod be forgotten with a tilting top.' There is much to be said in favor of a three and one-quarter by four and one-quarter camera fitted with a lens of the greatest focal length it will take. A developer formula which gives extremely fine grain along with an exquisite quality for reproduction in lantern slides and enlargements is:

Water.....	100 c.c.
Paraphenylenediamine.....	1 gram
Sodium sulphite (dry).....	6 grams

"The image is of a sickly character at first sight but examination of the negative by transmitted light after fixing and washing have been done leaves nothing to be desired."

TITLES FOR PHOTOGRAPHS

A writer in *Photography* a few years ago offered the following suggestions for titles, and as they are so good we reprint them, believing they will be of assistance to our readers.

SUNSHINE.

- "Evening warmth of barred sunshine."
—*Ruskin*.
"The sun came dazzling through the trees."
—*Tennyson*.
"The warm sun is failing."
—*Shelly*.
"Young and old come forth to play
On a sunshine holiday."
—*Milton*.
"Clear shining after rain."
—*Last Words of David*.
"With brightest sunshine round me spread
Of Spring's unclouded weather."
—*Wordsworth*.

PASTORAL.

- "Forth goes the woodman."
—*Cowper*.
"The lowing herd winds slowly o'er the lea."
—*Gray*.
"The ploughman homeward plods his weary way."
—*Gray*.
"The whistling plowman stalks afield."
—*Beattie*.
"Down the rough path the ponderous wagon rings."
—*Beattie*.
"The sturdy swain."
—*Bryant*.
"Rest faithful plough, thy work is done
Upon the teeming land."
—*Bryant*.
"Walks by silent scented paths."
—*Ruskin*.
"Thatched were the roofs with dormer windows and gables projecting
Over the basement below, protected and shaded the doorway."
—*Longfellow*.
"Then came the laborers home from the fields."
—*Longfellow*.
"The mower wets his scythe."
—*Milton*.
"While the ploughman
Whistles o'er the furrow'd land."
—*Milton*.
"Where the nibbling flocks do stray."
—*Milton*.
"First in the dusky dawn he sends abroad
His early scout, his emissary, smoke,
The earliest, latest pilgrim from his roof."
—*Thoreau*.
"The sober herd that lowed to meet their young."
—*Goldsmith*.
"The noisy geese that gabbled o'er the pool."
—*Goldsmith*.
"The sheltered cot."
—*Goldsmith*.
"The busy mill."
—*Goldsmith*.
"Cheerful at morn, he wakes from short repose,
Breathes the keen air, and whistles as he goes."
—*Goldsmith*.
AUTUMN—HARVEST.
"The teeming autumn, big with rich increase."
—*Shakespeare*.

- "Where the golden apples grow."
—*R. L. Stevenson*.
"The shining stems that summer gilds."
—*Bryant*.
"Long fields of barley and of rye."
—*Tennyson*.
"The harvest that o'erflows the vale
And swells, an amber sea, between
The full leav'd woods."
—*Bryant*.
"Golden fields of bending corn."
—*M. Howitt*.
"The fields
With ripening harvest prodigally fair."
—*Wordsworth*.
"In among the bearded barley."
—*Tennyson*.
TREES AND WOODS.
"In palace aisles of untrod woods."
—*Lowell*.
"Leafy gracefulness."
—*Lowell*.
"The sounding aisles of the dim woods."
—*Mrs. Hemans*.
"The pathless woods."
—*Byron*.
"Woods over woods in gay theatric pride."
—*Goldsmith*.
"Pines that stood
The giants of the waste,
Tortured by storms to shapes as rude
As serpents interlaced."
—*Shelley*.
"With green trees shadowed was his place."
—*Chaucer*.
"Yonder alleys green."
—*Milton*.
"Wave your tops ye pines,
In sign of worship, wave."
—*Milton*.
"The scattered pines."
—*Whittier*.

LIGHTING PROFILES

A profile will be made most intelligible by introducing the light rather behind the head, so as to throw the receding boundaries of the front of the forehead, eyes, cheeks, nose and chin into a half-tint. The principal light will be on the upper parts of the temples, cheek bones, and the ear; and the principal shadows under the hair, upon the cheek and temples and under the eyebrow close to the nose. The whole of the front of the iris of the eye will be light, except close under the eyelashes. The pupil of the eye will be scarcely visible, but the eyeball will appear darkest where the pupil is known to be. With a light background a beautiful relief will be given the head. A profile so illuminated ought never to be under-exposed, and care must be taken not to make the contrast of light and shade too great, but to get delicate shadows by the judicious use of reflected light.

The slightest difference in the angle at which the top or side light enters the studio and falls upon the head makes either a picture or a blur. (Not even an artistic blur at that.)

However, it does not follow that all profiles should be illuminated by a side light behind the head. Some features are more effectively illuminated by front light—but when a front light is employed a dark background must be used to secure proper relief of the head.

Letters to the Editor

Gentlemen:—The *Library of Amateur Photography* received, and, to say the least, it is an invaluable wealth of knowledge that should be in every amateur's home.

It's the biggest two and a half dollars' worth that can be bought.

H. E. MOXTER.

*

My dear Mr. Chambers:—Not having been notified of my good fortune, it came as a complete and most pleasant surprise, when I opened my *CAMERA* for July and saw that "A Quaint Little Maid" had won the second award.

I want to thank you, not only for this honor which I deeply appreciate, but for the words of praise which accompany the beautiful reproduction.

While the money value of these prizes is a big help in carrying on my work, I find my greatest help and incentive in the appreciative words I have won from your magazine and others, where my work has been reproduced.

This award makes a little over \$50 that I have won in prizes from photo magazines since I joined "The Capital Camera Club," of Washington, D. C., just two years ago.

Up to that time I had done the usual snapshot work with films and a kodak, and had it not been for your valuable magazine, and two others in which I became interested through a friend, I doubt if I would have ever advanced past that stage.

But constant reading and getting in touch with the best in the photographic line made me so ambitious I joined our Camera Club,—and great has been the joy thereof!

In May I was fortunate in winning the third award,—my first prize from *THE CAMERA*; now I am one step nearer, and you may be sure I will not be satisfied until I have been successful in carrying off the first prize.

Very sincerely yours,

WILMA B. McDEVITT.

*

Dear Sir:—Referring to the June issue of *THE CAMERA*, page 343, you make mention of the cover design.

I am inclined to take issue with you (or the photographer) as to the trimming of this print.

If some of us amateurs had sent you or any other magazine this same print for criticism, I believe in every case we would have been told to "trim the print more." This is exactly what I think about this picture. The thought I get in looking at this picture is, there being more water than land, together with the bending position of the female, that she is getting

ready to jump in, which makes the picture seem top-heavy.

My criticism of this picture as it appears on the cover page is: Cut off 2 inches of the bottom; cut off $\frac{3}{4}$ -inch of the left side and then add enough to the tops of the trees in the background to lower the subject to such a point that the border land line in front of the female will not seem to divide the upper and lower parts into *equal* parts. I believe 2 inches should be taken from the bottom, however else the rest looks. *We amateurs* have not been asked to criticise "our elders," but I have ventured "to peep my head out from under the cover" and speak out.

This thought of a number of amateurs often occurs, when a fellow "way up in G" sends out a picture: that if some of *us* had sent in the same thing we would have been criticised to death and the picture consigned to the waste basket. So much for this time.—O. S. M.

[On general principles, we shall have to admit the validity of your contention in reference to the spacing of the picture forming the cover design of the June issue of *THE CAMERA*.

Considered as a picture pure and simple, a subject intended to express some particular motive, a trimming after the manner you suggest would produce better space relation, give better balance to the parts, and so, on the whole, present more artistic composition; and your critique, as you anticipate, would be just the criticism we would be likely to advance. But, in this particular case, we were more influenced by what is called the "decorative value" of the picture; and we think this motive was paramount in the artist's intention when he composed it. He felt he must sacrifice the sentimental part to the production of something of a striking character. We admit there is a great danger here in running into the sensational, but the artist has here kept within the limits of good taste and yet given us something original and effective, something that at once attracts attention from the unusual presentation. In a word, a little that is "bizarre" is admissible in pure decorative work, to the extent of giving particular emphasis to the essential feature.

By cutting off the lower part of the print to the slight extent even you suggest, would practically bring the figure lower down in the view, and so dwarf it and take away from its dignity and importance—just as the dignity of a high mountain peak is diminished by having it low down in a picture with a vast extent of sky above it. By placing the peak more to the top of the picture its greater altitude is suggested, and so with the figure.

We are very glad to have this expression of your opinion, particularly as you give evidence of knowledge of the principles governing pictorial composition. Criticism is, after all, a matter of personal opinion, and art is wide enough for contention, and so we fully appreciate your position and value your appraisal.—ED. *THE CAMERA*.]

THE PHOTOGRAPHER'S STORY

WALTER G. DOTY

The photographer said with a sigh:

"These amateurs sure are the plague
When they come here demanding that I
Develop their negatives vague.

Their films and their dry plates they bring
All crinkled or battered or checked,
And they think it 'a very strange thing'
When I fail of the proper effect.

Last week, in a young fellow strayed
To ask that as soon as I could
I finish some efforts he'd made,—
He was sure they would prove to be good.

When I had the leisure to spare,
I straightway developed the lot;
I handled and dried them with care,
Then I looked to see what I had got.

They were pictures, he'd said, of his 'peach,'—
They were blank as an owl's eye at noon,
Save that in the center of each
Was a small shiny disk like a moon.

When he came for the pictures next day
I pumped him to see what he'd done;
And it turned out that this was the way
He had taken his views, every one:

He had held the machine wrong end to—
The front end turned 'round toward his
breast—

And had taken six times the same view
Of a button, by George! on his vest!"

"SOFT FOCUS" EFFECTS

Said the showman: "You can pay without coming into my show if you like, but you cannot come in without paying." That is to say, concludes a writer in *The Amateur Photographer*, from a sharp negative you can make an unsharp print, but you cannot make a sharp print from an unsharp negative. The question now is as to which of the various methods at our disposal for softening the image shall we use? Let us glance at some of them, as each has its advantages:

"1. We can deliberately put the easel-picture out of focus at our will.

"2. We can do this, and during the exposure rack the lens to and fro, thus giving a special kind of softening-effect, which is by no means unpleasing in some cases.

"3. We can make part of the exposure with the image in sharp focus and part with it slightly out of focus. This method deserves special attention in the hands of those interested in portraiture.

"4. We can focus sharply, and then overlay the paper on the easel with a sheet of stout plate glass. The central part of the underlying print will be but little affected, but the parts toward the edges and corners will be softened.

"5. We all have observed the quivering image of a distant scene viewed through the ascending warm air currents when the sum-

mer sun shines on the sand-dunes, etc. This has given the hint of causing an ascending air current in front of the lens by holding a foot or so below the lens a red-hot poker or small spirit lamp.

"6. Another curious suggestion is that of tying a piece of elastic to the lens—stretching the elastic tightly and then twanging it as one does a harp-string.

"7. An ingenious smoker friend puffs clouds of smoke across the path of the projected ray, *i. e.*, between the lens and the easel during the exposure.

"8. Analogous in some degree is the plan of covering the projecting lens with one or more thicknesses of chiffon, producing a light scattering effect. In both these methods (7 and 8) we have 'scatter' as the softening element. This tends to soften definition and light up the shadows.

"9. These methods naturally lead to another method, which at first glance seems more similar than is really the case. I refer to the plan of placing a woven fabric screen, *e. g.*, bolting cloth, milling silk, net, chiffon, canvas, etc., and other open-mesh material either in close contact with or within a short distance of the paper on the easel.

"10. Roundness of modeling and breadth are obtained when the largest aperture of an anastigmat is used and the image focused as sharply as possible. This peculiar quality in the enlargement appears to be due to a certain lateral spreading of the light that only occurs when a very big aperture is used, and the result, even from a hard and perfectly sharp negative, is very soft and pleasing.

"11. A result akin to that described in the preceding paragraph, but giving more diffusion and, at the same time, a delightful and characteristic effect, is that obtained with one of the new semi-achromatic lenses; although it should be borne in mind, that to obtain the best results, the enlargement should be made from a positive, and prints then made from the enlarged negative.

"12. At the other end of the financial scale we can buy for fifteen cents or so a single uncorrected, and unmounted spectacle-lens of almost any desired focal length. The handy man can easily make a card and glue a mount and stops. Now, a single lens of this kind, stopped down to *f*11 or *f*16, is quite a characteristic tool, giving a quality of its own with apparently sharper definition in the center than the edges or *vice versa*.

"13. Yet another method is the double stop. By way of example let us suppose an eight-inch focus lens, so that *f*8 stop would be one-inch in diameter. We now cut out a circle of this size. Then to the black paper we fix a piece of clean white and clear gelatine. Out of the center of this we cut a circular opening one-half inch in diameter. The double stop thus made is inserted in the lens mount in place of the usual diaphragm and gives an effect similar to method 3."

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

There have been many influences to account for the falling off in Sunday-school attendances within recent years, and the only effective way to combat these is to utilize every possible modern method of enhancing the interest in lessons. The motion-picture has won its spurs because it can serve up dry facts in an appetizing manner, and this applies to Bible lessons and the teachings of Christianity.

As a well-known preacher said: "You can teach a boy a lesson in Sunday-school, but he is not interested, and, if he listens at all, he soon forgets what he has learned, while the lesson of the motion picture is not only intensely interesting, but it has a dramatic and lasting effect on the boy. If I could select my own pictures, I believe I could reform any bad boy."

Rev. C. F. Reisner, pastor of the Grace Methodist Episcopal Church, New York City, selects his programs from five thousand educational subjects. He does not show religious films exclusively, but also lectures on films depicting such subjects as cotton growing in the South, and wheat raising. Dr. Reisner is a pioneer in the church motion-picture field, and one minister who adopted his methods has increased his Sunday-school attendance by eight hundred. Dr. Reisner gave motion-picture entertainments to seventeen thousand children during the first year of operation. "I firmly believe," he said, "that these entertainments do more to stimulate interest in Sunday-school work than anything else."

Not so long ago the Superintendent of the Sunday-school attached to the Central Presbyterian Church, Rock Island, Illinois, inaugurated a series of motion-picture shows. These are given on Friday nights, and only those pupils who have been regular in their Sunday-school attendance receive tickets of admission.

The Rev. Oscar C. Helming, pastor of the University Church, Chicago, has converted his Sunday-school room into a motion-picture theatre, in which he presents his picture program. He reports increased attendance, and the shows have had a marked effect upon the older children as well.

All these typical instances go to prove that motion pictures are a necessary adjunct to Sunday-school work, and the motion-picture

photographer should add this field to his list of possible markets.

There is a great future before the motion picture as an advertising medium, which is only in its infancy today. To achieve permanent results, the spasmodic plan at present prevailing must be abandoned. No advertiser would dream of inserting a single advertisement in the press, and expect it to produce business for all time. The film is a permanent "ad," but it must be kept on the rounds to folks who have not seen it before. It is the greatest mistake in the world to present the same film before the identical audience day after day. Would an advertiser employ the same copy in the newspapers for more than one issue? Hardly; he would alter it so as to capture the most skeptical customer.

This is why I hold the opinion that a moving-picture expert will be on the staff of every large manufacturing concern. His duty will be to present his employer's copy to the best possible advantage on the film. At the same time, each large advertiser will lay down a film-producing plant. It is going to incur a big initial outlay to provide a studio, accessories, stock company and developing plant, but he will get his money back by the considerable saving effected in not having to have his work done outside. Naturally, this expenditure will not be justified, unless the advertiser is prepared to launch his publicity campaign along the same extensive lines as pursued in the press. We shall find him, I fancy, releasing new films with clockwork regularity. By having all the facilities at his command for the producing of these, he will be dependent on nobody.

His first big move will be to coax some of the leading stars to be featured in an advertising film which is to be produced in an elaborate manner. The fee for his or her services will be large, but, on the other hand, exhibitors will simply clamor for the free hire of the film, with, say, Earle Williams as a bachelor, who has his housekeeping troubles lessened by some article on the market. The great saving in the fees paid to exhibitors for showing an ordinary "ad" film will be effected. Such a picture would secure a larger circulation, apart from the fact that movie fans will sit up and take notice when they behold their idol in a rôle similar to the

one mentioned. This will mean the "ad" appeal getting over more convincingly.

The next development will be the advertising film serial. As you are probably aware, the dramatic serial has taken the photoplay world by storm. It is the ideal vehicle for the advertiser, inasmuch as it permits the interest to be retained. The story, if sufficiently gripping, will keep audiences in suspense from one week to another. There will be none of those trite stories that form the basis of "ad" films today. An aim will also be made to avoid permitting the advertising element to obtrude.

For the animated newspapers a special type of "ads" will be needed. They will be sandwiched in the news items and be of a topical character, so as to preserve the same atmosphere. For instance, when a battleship is launched, you won't forget to be told the brand of the champagne that is smashed upon the vessel.

The feature production does not appeal to me much as a paying proposition for the advertiser. It is too reminiscent of trying to cram as much matter as possible in a single advertisement.

The film is a perfect paradise for the honest advertiser, for, as yet, fraudulent advertising has not been allowed to mingle with the genuine. The plant of a food manufacturer, for instance, may be unsanitary and inferior raw materials used. Should this type of business man be unscrupulous enough, he might have the conditions of his plant pictured as ideal, by faking the whole thing in a film studio.

What is sapping the progress of film advertising is that no systematic method of circularizing exists, for, naturally, this end of the process is as important as the picture itself. What I predict is publicity agencies specializing in motion-picture theatres. Then, when an advertiser has a high-class proposition, a circuit of high-class theatres in select localities will be chosen, thus eliminating waste circulation.

The immense success achieved by "The Birth of a Nation" induced Thomas Dixon to go into the film producing game on his own account, and "The Fall of a Nation" is his first effort. It is in the same class as "The Battle Cry of Peace," only ever so much better. Mr. Dixon has taken his cue from Griffith—it is easy to discern this, for although the theme is of a mighty character, dealing as it does with an invasion of America, not once does the author-producer neglect the human interest side. Even when the battle scenes are at their most deadly life-destroying stages—and the enormous howitzers bring the horrors of Europe home to you—there are tender incidents between a cat and a dog, and child and mother, that pull at the heart strings.

The story, however, is rather improbable at times. I doubt whether a force of several hundred thousand men could be trained and

equipped in the West and unexpectedly attack the enemy in the East. Are there no such things as spies and aeroplane-scouts? As a bit of fiction it is decidedly interesting—the women will especially like it, for it is they who save the day for America *a la* the Ku Klux Clans in "The Birth of a Nation."

Mr. Dixon took a great risk when not signing up a star, although it cannot be said that his judgment was at fault. The players do know how to act, and when the play contains a fairly long cast of principals, as this one does, nothing else need be said. The photography, as may be expected from a California product, is uniformly good.

Although the silhouette motion picture has been declared to be new, it is not. For years producers have been giving us unique shadow effects, especially on blinds at night and the reflection of the sun outside in the daytime. Many important dramatic situations have hinged upon these effects.

But the credit for the first silhouette must go to England, for, in 1913, C. Armstrong, of Kew, London, put a film on the market under the title of "Playtown Circus." In this picture, a trick one, all sorts of animals did amazing stunts behind a curtain.

The Gilbert silhouettes, however, serve to tackle the dramatic side for the first time. The scenarios are written by C. Allan Gilbert, who has attempted the most fantastical themes, which are visualized in black and white.

"Britain Prepared" does not pretend to be a war film, yet it is so absorbingly interesting for an educational production that the two hours spent in viewing it seem to be all too short. The first part deals with Britain's new army in the making. You get a fuller conception of the conditions of modern warfare—a trench is more than a hole in the ground, in which soldiers stand around. This is but one instance, however. The English suffragist is doing more deadly work than wrecking churches—she is making munitions, which, apparently meets with more favor with the British Government than her former tactics. At last she has come into her own!

Part two deals with that many-sided organization—the British Navy. It is very entertaining to see guns, shells, engines, submarines and battleships in the making. The Grand Fleet scenes were evidently taken at some naval base—probably the Orkney Islands.

The photographer, Charles Urban, was not strong on "close-ups." A few of these of Admiral Sir John Jellicoe and members of the crew of the *Queen Elizabeth* would have added interest to the production.

The society folk introduced in a photoplay coming from a Pacific coast studio were the genuine variety. The ball-room, too, was staged in the exclusive Hotel Green, of Pasadena. I understand that the director approached the smart set, seated at the afternoon tea tables, and invited them to

appear in his film for fun. They did so, and at the dinner which followed, the amateurs complimented the director on his patience in rehearsing them. It was understood, however, that their names were not to be mentioned in the cast.

The substitution of paper rolls for celluloid films in moving picture machines is made possible by the new "cold" light discovered by the French engineer Dussaud. The light, described to the Academy of Science by Professor Branley, with whom Dussaud studied the new light, is obtained by automatic separation of heat rays from luminous rays which occur together in all sources of light hitherto known to science.

The quest of an absolutely pure light devoid of all heat has long been one of the great problems of modern physics. The electric light is the nearest approach to this idea, but far from it, as it gives off a certain amount of heat.

M. Dussaud has been working on this problem for many years. The light obtained by his method is so intense that it is possible to throw images from newspaper illustrations, picture postcards and photographic prints on a screen even in a lighted room as clearly and sharply as if they were glass lantern slides.

The Rev. F. B. Dickman, writing to the *Paramount Progress*, says:

"As pastor of the Catholic congregation in the little village of Rutland, Illinois, I have always endeavored to furnish what pleasure and social amusement I could, especially for the young people, the old church having been converted into a hall for this purpose. In November, 1914, the only picture theatre here had a disastrous fire and failed to recover. Several persons asked me to install a motion picture outfit.

"At that time I had not attended a dozen picture shows, and I was more familiar with the bitter criticisms against pictures than with the merits of the films themselves. I knew nothing about the rental of films or the nature of the subjects to be had, nothing about picture machines or how to operate one. I began to investigate, and I suppose I developed more favorable interest for pictures in two months than a great many exhibitors do in their whole life. As a result, the projection outfit was installed. Last summer when the old hall burned, my congregation bought the Opera House, and at once equipped it with an elegant picture outfit. I can operate the machine myself, and I keep posted on the merits of most of the films released, but being a clergyman, I remain in the background and let some of my young men run the business for the congregation, except the renting of the films, for which I am personally responsible. We clear some money; not much; but money is not the main object.

"Motion pictures appeal to me very strongly on account of their tremendous power for education and entertainment. Every child loves to look through a book with pictures in it. Nearly everyone, old or young, enjoys

pictures in magazines, art galleries or where ever they may be. This fundamental instinct or quality in human nature is the main reason for the wonderful popularity of motion pictures, and for the same reason I am sure the films have come to stay.

"The educational possibilities alone are almost beyond comprehension. For those who cannot travel, the motion picture opens up a magic wonderland of beautiful lawns and flowers, fine architecture and sublime scenery. The industries of the world are brought to our doors, and we learn all about them without the weary routine of school drudgery.

"Human nature craves pleasure and recreation. The photoplay is admirably suited for this. Any normal young man would rather go to a picture show than to a saloon. The acting out of great truths, both religious and social, hilarious comedy that can drive away the blues faster than anything else can, and a thousand other fine things could never be enjoyed without motion pictures.

"My chief reason for hesitating before I permitted pictures in our hall was the large amount of objectional scenes shown in films that were otherwise good. It is easy to reject the picture that is all off color, but to find those that have nothing at all wrong is not always so easy, but it is necessary where a church is concerned. On the whole, there is a constant improvement. I have booked the Paramount Program because I feel that those back of it are trying to give the cleanest and best pictures possible. My work is church work, not picture work, so I have little time to spend selecting films from different sources in order to get what I can be sure is proper. I am paying the Paramount corporation a great compliment when I say I feel reasonably sure that I can take their releases as they come, without fear of compromising my position as a clergyman. A few of their pictures are not what I like to show, but only a few.

"A great many films have deserved all the censorship they received and more, too. The puzzle to me is why do not the film producers stop howling about censorship and get down to clean, correct pictures? I can never believe that the majority of picture patrons anywhere, in the city or country, demand what some exhibitors and producers say they do. And even if some do demand vampire stuff and the like, they should be refused. If a man wished to drink poison would that be a good reason for giving it to him? It is wrong in principle, and every film producer should insist on pictures as clean and correct as those found in the child's story book, which will be just as interesting and far better for the general success of the business. Isn't it far better to take fallen human nature away from its sordid self and show it the higher things? Divorce, suicide, married men and women flirting with others, murder and drinking of liquor should never be shown in pic-

tures at all, or if absolutely necessary to a plot that is really good in itself, they should be made as obscure as possible. The vast majority of picture-goers like the simple stories of love and adventure, the domestic animals, the beauties of nature, children, and, of course, always clean humor that is catchy and natural.

"Notwithstanding the faults of many of the pictures, most of them are clean and interesting, and I am thankful for these. There is no justice in condemning all films because some are bad. It is easy work to entertain people with good moving pictures, and if I can thus satisfy their craving for pleasure and diversion I am doing a great deal toward keeping them on the pathway of life which is pure and wholesome."

DISCOVERY OF THE LENS

We were asked the other day when the first lens was made. Probably our inquirer meant a photographic lens, inasmuch as he also wanted to know who first discovered the camera. We satisfied him, therefore, by replying photographically, but it set us to thinking as to when a lens was first thought of. It is difficult to fix the time of the genesis of most things in common use, even when it comes to our ordinary table fork, though we know of times not so remote when peas had to be eaten with a knife or spoon, and there are still some survivals of the primitive method. The question, however, as to the advent of the lens we fear is undeterminable.

We do know that the ancient Babylonians, some milleniums before the Christian Era possessed a double convex lens, for such a glass was discovered in the excavations of the Euphrates. At any rate, we might surmise that the expert gem engravers of that ancient period must have had some artificial vision to aid them in cutting the microscopic character of many of the seals.

We find the bull's eye as a means of illumination on some of the dwellings of Pompeii. A well-ground and polished lens from Pompeii is in the British Museum. So it is quite probable that there is truth in the story that Nero had a "pince nez" of an emerald, which he used at public performances. The date of the first lens of modern times cannot be definitely fixed. Roger Bacon, however, knew of its power to concentrate sun rays, and it is not mentioned by him as a novelty. The Arabian historians of the 8th century A. D., mention such glasses, and remark upon their property of focusing images upon a screen. DaPorta in the 16th century used a lens in his camera obscura. He even constructed for his painter friend, Canaleti, a sort of portable camera, to be used in sketching views of Venice. Father Kircher, of Germany, gives quite an elaborate description of the use of lenses, and even shows how to enlarge pictures by means of them. But this was in 1580 and close on to the time of Galileo. The first achromatic lens was the invention of Dollard, an Englishman of the 18th century.

WARM TONES

Dear Sir:—There are several well-known methods for obtaining warm tones on bromide paper; that is to say, formulæ for toning the developed image, but the most general method employed seems to be that of first bleaching the image in chlorides of copper and mercury, or with the potassium ferricyanide, and following this bleaching by immersion in a sulphide bath, preferably sodium sulphide, but this method is not sufficiently flexible, the tone is too uniformly of one color, and no modification of the process seems to be able to give variety of tone. Besides it is open to the objection found in the unpleasant odor of the sulphides.

I have tried the method published in *THE CAMERA* devised by some German experimenter, but unfortunately my results were not satisfactory. I therefore made use of the uranium process, which gave most beautiful results, and quite a variety of tones.

In the use of uranium it is absolutely necessary to get rid of every trace of hypo from the bromide paper before toning. If you do not, you will encounter red splotches.

I, therefore, to be sure I had eliminated all hypo traces, first placed my prints in a weak solution of hydrogen-peroxide, one part to twenty-five parts of water. I allowed the print to remain in this bath five minutes, keeping it in motion all the time, and then washed it in running water for five minutes more.

Make up the toning bath as follows:

Uranium nitrate.....	4 gr.
Potassium ferricyanide...	4 gr.
Acetic acid (glacial).....	45 drops
Water.....	8 oz.

The print on immersion begins to turn a dark brown color. Keep the tray in motion. The action can be arrested at any time by transferring to another tray where there is a stream of running water. But it is better to let the image tone a trifle further than you wish it to have in the finish, as it loses some in the washing. Any shade, from sepia to deep brown, can be had, according to the degree of toning.

To get a Bartolozzi red, a color quite effective for some subjects, you go about the toning in this way:

Carry the toning quite far. Wash well under the tap until the yellow in the high lights disappear; then place in a bath of red prussiate of potash and hypo (Farmer's reducer), where the print assumes the desired tone; wash well again and dry.

Do not be solicitous concerning the yellow appearance of the high lights in any of the tonings after the print is removed from the toning solution. This lemon color will disappear entirely in the washing waters.

After the washing do not fail to blot off the surface moisture from the prints by pressure between good, clean absorbent blotters. This is preferable to swabbing the surface with a cotton wad. Indeed, I have personally experienced undesired results from swabbing.—H.



G. Gennert, 24 East 13th Street, New York City, has just issued a new catalogue, No. 72, containing a complete line of apparatus and supplies handled by this concern. Also a catalogue containing the complete line of Ensign and other cameras. Copies may be had upon request.

Corks of various sizes, soaked in paraffin wax, will be found invaluable to have on hand in the dark-room. Treated in this wise, they are superior to glass stoppers for preserving solutions from air. They are perfectly water and acid proof, and free from the troublesome drawback, which glass stoppers have, by becoming jammed in the necks of bottles.

The use of albumen (ordinary white of egg) for the efficient mounting of prints is recommended in the *Photo-Review* by M. D. Bernard, who directs its use as follows: The back of the print is gone over with the finger (better than a brush) dipped in white of egg, and then laid at once on the mount. To fix it firmly it is then hot-pressed at a temperature of from 190 to 212 deg. F.—that is to say, as hot as the print will stand. This immediately coagulates the albumen, which thus firmly fixes the print to the mount. Damp has no effect upon this adhesive.

At an election of officers of the Camera Club of Detroit, Mich., held on June 19th, the following were elected: Otto H. Linstead, president; Cecil H. Taylor, vice-president; Phillip M. C. Armstrong, secretary-treasurer; Dr. Oscar E. Fischer and Herman Babriel, board members at large.

A program of events has been arranged, including a number of lectures, club outing and other entertainments. An open competition will be held in the fall, to be announced later.

The Second Popular Exhibition of Photographs will be held in the Wanamaker Store, Philadelphia, November 1st to 18th, 1916. Entries close October 21st, 1916, and should be sent, express paid, or delivered to the Camera Store, John Wanamaker, Philadelphia.

The first prize will be \$25 in cash; the second prize, \$15 in cash; the third prize, \$10 in cash; and ten prizes of \$3 each, besides honorable mention for as many pictures as the Judges find worthy.

Vacation pictures and pictures of anything interesting will be welcome. The prizes will be awarded by a committee of newspaper photographers who are practical men. To

encourage novices and beginners, no prizes will be awarded to any one who has won a prize in the Wanamaker Annual March Exhibition of Pictorial Photographs.

The Portrait Studio by "Practicus" of the British Journal of Photography. Henry Greenwood & Co., London; paper cover; 25 cents, postpaid.

This little treatise of some 50 pages is a collection of the papers recently published in the *British Journal of Photography*.

The important discussion of studio structure and management of illumination is taken up in a practical way, and suggestions are offered as to the arrangement and adaptation of the means at disposal as well as the accommodation of impediments to the achievement of a particular purpose.

The subject is one of the most important presented to the photographer, the literature of which is by no means extensive and too often not up to the present requirements of artistic portraiture. This book should be of special value to those who are anxious to avail themselves of the acquired experience of one who has personally experimented in portraiture, and who presents his success through the systematic study of the subject. One is taught how to constantly repeat some scheme of illumination by the explicit directions as to the control of the conditions under which the exposure is made.

We are glad to have such a comprehensive and practical pamphlet on the essentials of studio working to offer to our many inquirers addressing to us communications relative to this most important subject.

It is a good plan to check the focusing scale on a hand camera, particularly in the case of cheap instruments. By means of the following very simple operation the writer has found errors which, if not corrected, would certainly have led to disappointment sooner or later.

A series of knots were tied in a piece of string in order to mark the various distances on the scale, the string being stretched between two supports in the garden. At night the camera was set up at the end of the string, accurately leveled and focused by the scale for the first distance. A domestic was then instructed to hold a lighted candle over the first knot, while an exposure of a couple of seconds was given, the shutter being of course set to bulb, and the front raised to its fullest extent. Successive exposures were made while the candle was held at each of the remaining distances, the camera being carefully refocused in each case and the front dropped a little before each exposure. Upon development the relative sharpness of the several images at once draws attention to any defects in the graduation of the scale. If found to be wrong some further trials must be made, until the correct position for each mark is ascertained, when the scale can be altered accordingly.

BLUE TRANSPARENCIES

Blue transparencies may be made on spoiled negatives from which the silver has been removed from the gelatine, or the gelatine may be mixed with the sensitizing solution, and plain glass plates coated with the mixture.

To clean the spoiled negative from the blackened silver, place it in a tray and cover with Farmer's reducer, which is made as follows:

No. 1.	
Red prussiate of potash.....	1 oz.
Water.....	16 oz.

No. 2.	
Hyposulphite of soda.....	1 oz.
Water.....	16 oz.

Take equal parts of each mixture and soak the spoiled negatives in this solution until every trace of silver has disappeared and the gelatine is clear. Wash thoroughly, and while still wet place the plate face up in a developing-tray and flow over it a solution made of:

Citrate of iron and ammonia.....	1 oz.
Water.....	4 oz.

Let the plate remain in the solution one minute, drain, and set it to dry in a dark-room free from dust. When dry, print as from sensitive paper. Print until the shadows are slightly bronzed, remove from the frame, place face up in a developing-tray, and develop with a solution made of:

Red prussiate of potash.....	1 oz.
Water.....	4 oz.

When the development has been carried far enough, remove from the tray and wash in running water till the high-lights are clear, and dry in a place free from dust.

Another method of sensitizing is to use the blue-print formula. The plate is first freed from the silver and placed in a sensitizing bath made of equal parts of the following solutions:

No. 1.	
Citrate of iron and ammonia....	1½ oz.
Water.....	8 oz.

No. 2.	
Ferricyanide of potassium.....	1¼ oz.
Water.....	8 oz.

Two ounces of each solution will be enough to coat several plates. The sensitizing may be done by gas or lamp light. Lay the plate film side up in the tray, cover with the mixture, and let it remain for about three minutes. Dry in a dark-room, and print the same as for blue prints. It is of course impossible to examine the process of printing as in paper prints, but one can judge of the printing by opening half of the printing-frame and looking through the two plates. Print till the shadows are quite well bronzed, take from the frame, and wash in clear water until the high-lights are clear.

Plain glass plates are prepared for blue transparencies by mixing the gelatine with the sensitizing solution. Take one ounce of good gelatine—Cox's or Nelson's is perhaps the best, unless one uses the gelatine prepared

specially for photographic work—cover with water, and let it stand till thoroughly soaked. When smooth and soft add a little warm water, and mix till it is about the consistency of thick cream. Take an ounce each of the citrate of iron and ammonia and ferricyanide of potash solutions (formula given above), and one ounce of the soaked gelatine. Mix thoroughly, and flow over glass plates which are perfectly clean. If, after drying, the coating seems thin, the plates can be coated a second time. The sensitizing must be done by gas or lamp light, and the plates dried in the dark.

Print till the shadows are well bronzed; wash and dry same as for blue prints.

One may not be successful in the first attempts at preparing the plates, but after two or three experiments the process will be as easy as the making of blue-print paper.

The transparencies can be used in many ways, and are very decorative.

TO AVOID ABRASION MARKS

The opinion of those qualified to judge is that bromide and gaslight papers are undoubtedly the most popular printing media among amateur photographers. Records indicate that the consumption of bromide paper alone is probably as great as all other printing processes put together. Unfortunately, in most makes of paper there is always a tendency for stress marks to appear. Every user of bromide and gaslight paper is aware of this trouble, although several firms have introduced paper that is free from the defect. Gaslight papers appear to be more prone to stress marks than bromide papers, and different batches of the same maker will frequently exhibit them in greater or lesser degree.

The stress marks, which take the form of dark streaks and hair-like lines and markings, appear most frequently in the glossy and smooth-surface varieties of paper. They will usually be found to occur on the white margins of prints, and will generally be observed in greatest profusion on the light or delicate portions of a picture, where their presence is most objectionable. These stress marks appear to be due to abrasion of the surface, and while it is not clear why they should arise, they can in almost all cases be removed by rubbing the dry plate with a pledget of cotton-wool wet with methylated spirit. Various reducing agents in a dilute form have also been recommended for their removal, but in the method hereafter described the principle of prevention rather than cure has been followed, and from exhaustive experiments with a number of varieties of bromide and gaslight paper, there appears little doubt that it offers an efficacious remedy for the avoidance of this annoying fault.

For example, a print made on smooth matt bromide paper was exposed beneath a vignetted negative, leaving a broad white margin all around. The print was then cut in halves,

and before development the two pieces were rubbed vigorously together, film to film. One half was developed in a normal amidol developer. This produced a perfectly good print of half the negative, indicating that exposure was correct, but the white margin was covered with a mass of dirty markings produced by the vigorous friction the print had received. The other half when developed presented clear white margins with entire freedom from stress marks.

The magic that produced this remarkable result was merely our old friend hyposulphite of soda, and, moreover, used as an addition to the developer itself.

On many previous occasions the addition of hyposulphite of soda to the developer has been advocated for various purposes. But in this instance there is a deliberate departure from the well-considered advice of the textbooks, wherein one is counselled to avoid contamination with hypo during the process of the development of bromide and gaslight prints.

This addition of hypo appears to produce a similar result with most of the developers advocated for bromide and gaslight papers, and our experiments have included amidol, azol, metol-hydroquinone, and rodinal. The first-named was taken as the standard, and the formula used was:

Amidol.....	25 gr.
Sulphite of soda.....	300 gr.
Water.....	10 oz.

A few drops of ten per cent bromide of potassium solution were also added. This formula was used to develop the first half of the print mentioned above, and the same formula, plus six to ten grains of hypo, was used for the second half, bringing about the entire abolition of the stress marks. It would seem that practically and published developing formula for bromide or gaslight paper can be used in the manner suggested, and readers of *The A. P.* should experiment on these lines for themselves.

The amount of hypo that can be added with safety to the developer without unduly slowing it or producing any bad effects appears to be fairly considerable; as much as twenty grains were added to the developer with no other effect than the removal of the stress marks. Beyond that amount the action became slower, and subsequent experiments showed that if there was any tendency to under-exposure or for the developer to be exhausted, stains were liable to arise.

Given fresh solution and a properly exposed print, however, the presence of hypo is a distinct gain to the developer for bromide and gaslight prints, and bright, clean results can be secured every time. A careful comparison between the tones and gradations of the two halves of a print treated as described above showed no appreciable difference. There was also very little difference, if any, between the times of development of the two halves, although the prints developed with hypo in

the developer took a trifle longer before visible developing action commenced.

The advocacy of this method of avoiding stress marks in bromide and gaslight paper must not be taken as a general direction for the encouragement of careless and dirty work. Let the worker who adds hypo to his developer for a definite purpose deal with it as conscientiously as though it were still forbidden. Although it is demonstrated that hypo is not taboo, as heretofore, splashing the fixing-bath into the developer or passing prints from developer to fixing solution, and then continuing developing with unwashed hands, is still as likely as ever to be productive of unforeseen troubles.

URANIUM TONING

It is generally known that ordinary formulæ for toning bromide prints with uranium do not give pure whites. This is because the uranium salt reacts with the soluble potassium ferrocyanide which is found during the toning process, and the resulting red precipitate of uranium ferrocyanide tinges the whites. If the print is first treated with potassium ferricyanide until bleached, and then thoroughly washed, the soluble ferrocyanide will be removed. But it is now found that uranium nitrate will not act, and it is necessary to use uranium chloride. As this is expensive, L. Bune proposes the following process: Immerse the print in a two to five per cent of potassium ferricyanide, where it rapidly bleaches. Wash for fifteen minutes with five or six changes of water. Treat with a cold solution made thus:

Warm water.....	3½ oz.
Table salt.....	308 gr.
Uranium nitrate.....	15 gr.

The tones are beautiful sepias, with pure whites. Pictures with good contrasts should be taken, and the first bleaching should not be carried too far.—*Bull. Assoc. Belge.*

THE PINHOLE STOP

Apart from the pinhole used as a lens, a pinhole used in conjunction with a lens—that is, employed as a very small stop—is often of considerable value, provided the subject is sufficiently well lighted. It is true diffraction, and consequent loss of definition is said to ensue if the aperture is reduced to less than *f*71, but this is more formidable in theory than in practice. If a building has to be photographed from a point too near to allow the whole building to appear upon the plate, a pinhole star cut in black paper and fixed in contact with the iris will get over the difficulty. The iris is first closed down as small as possible, and the bellows packed in till the image is of a convenient size. An enormous amount of depth of focus can be obtained by means of a pinhole star, a 7-inch lens giving fairly sharp images at any camera extension between 5½ and 8½ inches, especially if a matt paper is used for printing.

INTENSIFICATION OF NEGATIVES

A durable intensifier suitable for line negatives can be made as follows. Make up two stock solutions:

- I.
 - (a) Chloride of mercury..... 1 part
 - Hot water..... 20 parts
 - (b) Water..... 20 parts
 - Potassium bromide..... 1 part

These two solutions must be mixed.

- II.
 - (a) Silver nitrate..... 1 part
 - Water..... 20 parts
 - (b) Water..... 20 parts
 - Potassium cyanide..... 1 part

These solutions must also be mixed, pouring *b* into *a* slowly and a little at a time. A white precipitate is formed, and solution *b* is added until this almost, but not quite, disappears. A precipitate must remain, which is obtained by the addition of a fresh solution of silver nitrate. The negative is first bleached in Solution I, washed ten minutes and placed in Solution II, in which it turns black. When it appears to have become black through and through, it is again washed. A long stay in Solution II weakens the density again.—*Chronik.*

ENLARGEMENTS OR DIRECT LARGE NEGATIVES

How often do we hear the question asked: "Do enlargements from small negatives translate the artistic qualities of the original as well as direct large negatives?" We are inclined to think that a direct large negative would render the half-tones more beautiful than an enlargement from a small negative. In an enlargement the relation of the patches of light and shade is not by any means so harmonious as in a direct negative. There is always an unavoidable break, a falling off in the half-tones, so that up to a certain size it would be better to make direct negatives. But when large sizes are demanded the additional factors of increased expense of plate, camera, etc., enter into consideration, as well as the great increase in mechanical difficulties attending the production of large direct negatives.

Direct enlargements would require lenses of long foci to prevent distortion and to keep all the parts in relative sharpness, and failures to estimate the correct time count seriously when large plates are required.

Most excellent results in enlargements can be obtained by making an ordinary size negative, from which an enlarged positive is taken of the required size, and from this the desired negative for reproducing. The advantage of this plan is that the positive can be retouched, the imperfections removed or toned down, obscured parts sharpened, etc., so that the negative made from it by contact is greatly improved even over the original small negatives.

We have seen excellent work so made from small negatives.

THE VALUE OF ILLUSTRATIONS

Turn over the pages of any paper or magazine. You will find that quite instinctively your eye is caught by the illustrations, if there are any. Indeed, we will go further and say that, in the ordinary way, the first thing you look for when you take up a periodical is to see whether it is illustrated, and the more cursory your glance through its pages, the more certain are the illustrations to monopolize the bulk of your attention. This is true just as much of the advertising as of the editorial columns.

Now we might say right away that we are not of those who think that it is absolutely necessary that an advertisement should be illustrated. But having said that, we are free to state that there is no gainsaying the tremendous advertising value of illustrations. They have a power to rivet attention, to arouse interest, and to convey a direct impression that is unquestionable.

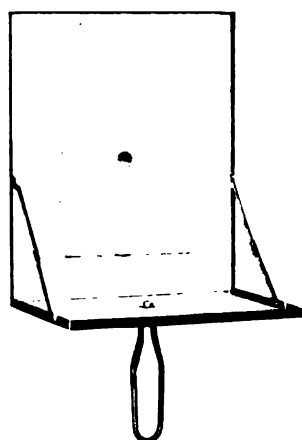
Moreover, they can carry more argument, more detail, and more conviction to a reader's mind, *at a glance*, than can be conveyed by a column of type matter, even if you can get the latter read. But we need hardly add, that like everything else in advertising, illustrations must be used with intelligence and discretion if they are to pay their way—as they should do.

For advertising purposes, an illustration must be reasonably well drawn. If it is obviously the work of a tyro, it is far more likely to do harm than good, to cheapen the appearance of the advertisement, and to bring discredit on the firm that uses it.

On the other hand the advertiser will find little use for the "pretty picture" or for Art with a capital A. Academy pictures have often been utilized to advantage for advertising purposes; but having press advertising in mind at the moment, we recommend "commercial art" for commercial purposes. And commercial art can only be produced by an artist who has a first hand knowledge and experience of commercial requirements.

The illustration should always form some part of the sales-message; that is, it should always illustrate something that has a direct bearing on the subject of the advertisement. Any illustration will attract attention of a sort; but to have a maximum of advertising value it should also be designed to create interest. It may, for instance, illustrate the goods themselves, their use, or some point that it is desirable to impress on the reader's mind. But certainly it should have some definite purpose, and not be merely dragged in with some sort of idea that, so long as there is an illustration of some kind in the advertisement, it will produce results. An illustration costs money, and if that money is spent in the right direction in buying the right kind of illustrations it will bring grist to the mill, and prove a profitable investment.—*The Photographic Dealer.*

Fire-light frolics, camp fire groups, pictures of the jolly evening gatherings at camp or cottage—here's material for your Kodak album.



Kodak Flash Sheet Holder
\$1.00

Eastman Flash Sheets and the

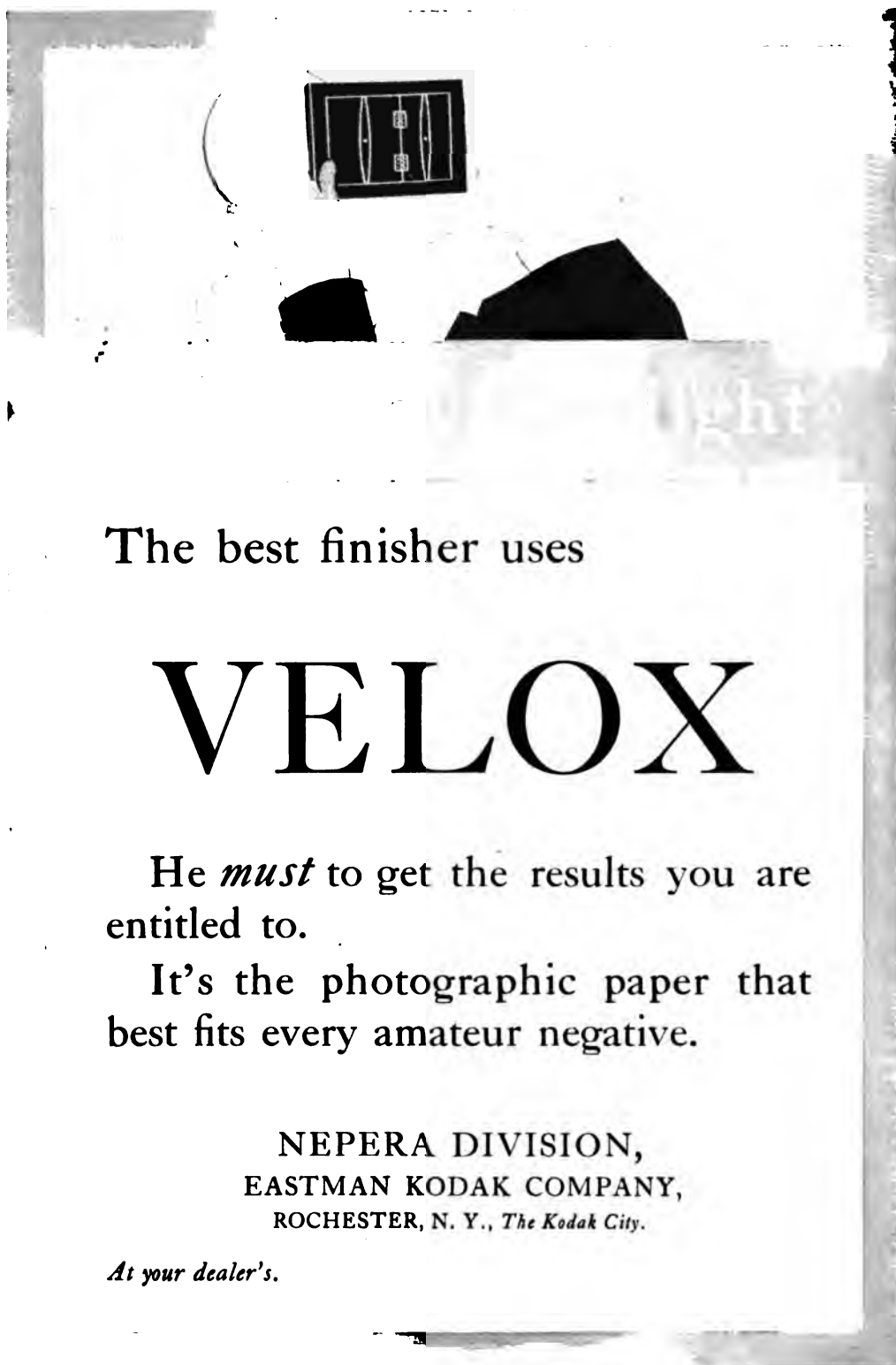
Kodak Flash Sheet Holder

make the taking of such pictures a simple matter. By their means flash light work has been reduced to its simplest forms. The sheets burn slowly without undue glare and the holder gives the amateur absolute control over his illumination.

A little free booklet, "By Flashlight," giving the A B C of flash light work is waiting for you at your dealer's—or we would be glad to send you a copy.

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

At your dealer's.



The best finisher uses

VELOX

He *must* to get the results you are entitled to.

It's the photographic paper that best fits every amateur negative.

NEPERA DIVISION,
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y., *The Kodak City.*

At your dealer's.

JUST TELL THE ADVERTISER THAT YOU SAW THE "ADVER" IN THE CAMERA


CHAMBERS PRESS
PHILADELPHIA

THE CAMERA



SEPTEMBER

15 CENTS

It does both

Some negatives show up better when printed in black-and-white. Others require a Vandyke brown print to interpret their tone values. Remember that

Cyko Paper

is the only paper that does both well, and is the brand that has a grade and surface to meet the requirements of different negatives.

Professional Cyko for Portraiture

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 for large pictures from small negatives

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 for hard contrastive amateur negatives

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Cyko Pointer yours for the asking.
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AnSCO Company

Binghamton, N. Y.



Volume Twenty

SEPTEMBER 1916

Number Nine

THE ANGLE VIEW OF YOUR LENS— NEIL WAYNE NORTHEY

WHAT is the angle of view of a lens and how can it be found by an amateur? In answer, I will say that if the angle view of a lens is known, the photographer can set up the camera for use at the proper distance from the object to be photographed without moving several times to find the correct distance. For instance, if we know that our lens has an angle of view of 45 degrees we have a mental picture of the angle and also of the field of view that these angles will include. With this in mind we can make a good guess at what distance we will have to be from the object to be photographed in order to include it in the picture. When the angle of view is once found it is a good idea to place a line of sight on the top of the camera similar to the letter V to aid the user when setting up the camera. These sights may be made by placing a tack in the center of the rear of the top of the camera, and another on each side in front at the proper angle, similar to those found on panorama cameras.

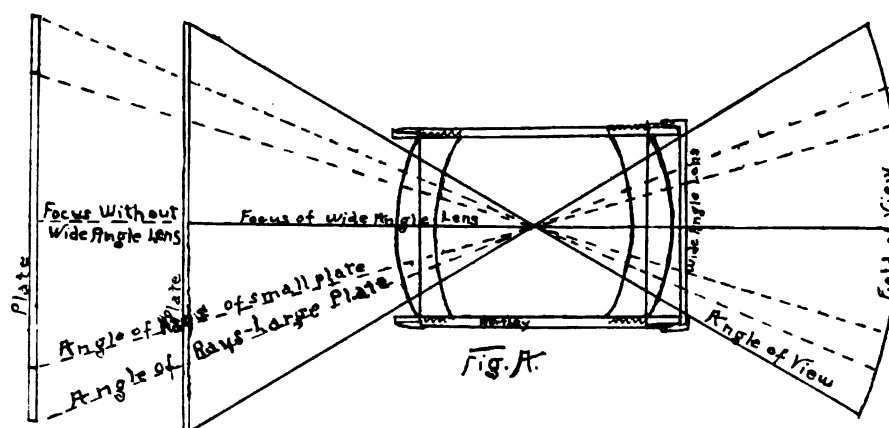
Before going further let us get a good idea of just what the angle of view of a lens is. Let us presume that there is a circle around the photographer at 100 feet. This circle, like all others, will be divided into 360 degrees. We will say that there are two trees on this circle that are just one-eighth of the circle, or 45 degrees apart. If your camera will photograph them both on the same plate, the angle of view of your lens is 45 degrees, if you are using the largest plate that the lens will cover distinctly. The angle of view of this lens is the angle that a line would take if drawn from one of the trees to a corner of the plate. The field of view is that part of the landscape between the two trees.

We will say that the lens in question is of $6\frac{1}{2}$ inches focal length, and that when it is focused for objects 100 feet away it will show a circle that is 6 inches if focused on a piece of ground-glass that is 12 inches square. We find that a 4 x 5 plate is covered nicely to the corners if placed within this

circle. If a line be drawn from the diagonal corners of the plate to the optical center of the lens this will be the angle of view of the lens. If these lines are continued in a straight line through the lens and to the 100-foot mark, the landscape included within is the field of view. However, as the picture is only 5 inches in length, the field of view shown would be that included, if a line was drawn from each end of the plate through the center of the lens and continuing to the circle at 100 feet.

The angle of view varies according to the focal length of the lens used and the size of the plate. To illustrate, let us suppose that a wide angle lens is capped over the one of $6\frac{1}{2}$ inches focus, to give us a wider field of view. I wonder how many of the readers know just what happens when this is done.

Before going further, I will tell how you may find the approximate angle of view of any lens very easily. This is not absolutely exact but is very close, and is as near as can be learned without a lot of confusing figures. This is a



system that I have worked out myself from ideas learned while carpentering. If this system has been used before, it has not come to my notice. If there are any carpenters among my readers they will readily understand the idea, although it is not necessary to understand the why of it to get results.

With a pair of compasses or a string, draw a circle that has a diameter of two feet. With a steel square draw a horizontal line A-B across this circle through the middle and a vertical line C-D in the same way, so that the point marked O, where they cross, is the exact center of the circle. We will call this the optical center of the lens. Each quarter of the circle represents 90 degrees. Selecting the upper right-hand quarter we will mark it into degrees, spacing it off with the compasses to get the correct distance between each. Beginning at B, we will call it no degree, and from there to the point marked D, which is 90 degrees, we will make eight lines at equal distances apart and running from the circumference to the point marked O in the center of the circle. These are numbered as shown and may be divided again if you wish. Each line represents 10 degrees. On the line from O to B mark into inches and one-



"A CHILD STUDY." SARA F. T. PRICE, MT. AIRY, PHILADELPHIA



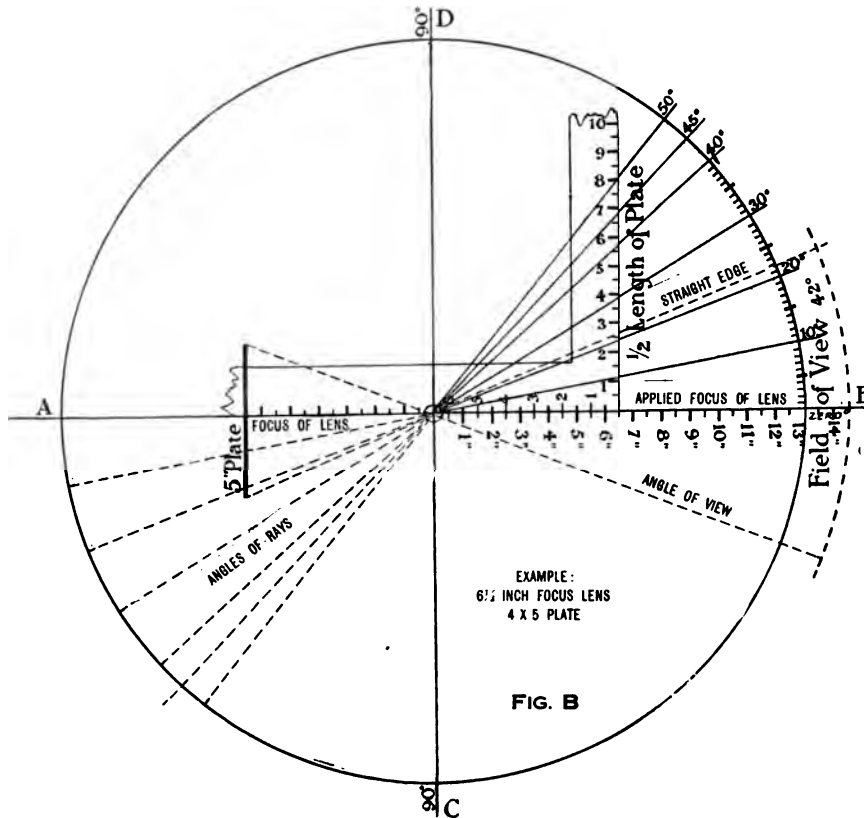
"THE VILLAGE CHURCH." J. H. FIELD, FAYETTEVILLE, ARK.

fourth inches and let this line represent the focal length of the lens. Refer to Fig. B for the above-mentioned numbers.

To find the angle of view, place a steel square along the line as illustrated until one blade marks off the focal length of the lens with the other pointing up. On this blade measure off one-half the length of the plate used and make a dot with a lead pencil. Place a straight edge or the square from the point marked O across this dot and to the edge of the circle. This will indicate the angle of view and one-half of the field of view.

To illustrate, let us take the example mentioned above. With the square, measure off $6\frac{1}{2}$ inches as the focal length of the lens, and on the other blade measure $2\frac{1}{2}$ inches as half of the length of the plate and make a dot. Now, when a line is drawn as advised, we find that it indicates a point on the circle near 20 degrees, which is the angle of view and half of the field of view. As the diagonal of a 4×5 plate is a fraction over six inches, this lens would cover a $4\frac{1}{4} \times 6\frac{1}{2}$ plate by stopping down, and would give us an angle of view of about 25 degrees, and the field of view of 50 degrees.

Let us return to the wide angle lens capped over the one of $6\frac{1}{2}$ inches focus. The object of a wide angle lens is to shorten the focal length. The drawing (Fig. A) illustrates the angle of view and how it is altered by the use



of a wide angle lens. We will say that the wide angle lens shortens the focus in this case to four inches. Using the drawing (Fig. B) we find that the field of view is now about 65 degrees instead of 40 degrees. This, of course, means that the image on the plate must be reduced in proportion as 65 is to 40.

Let us say that we wish to use the front combination of the lens alone to secure a larger image on the plate. Suppose that this increases the focal length to eight inches. Again using the drawing we find that our field of view is now about 35 degrees.

Suppose that we have a lens of twelve inches focus that covers an 8 x 10 plate. The field of view in this instance is about 45 degrees. Let us say that we wish to use a 4 x 5 plate with this lens. In this case the field of view is reduced, while the image remains the same. According to the drawing we have a field of view of about $22\frac{1}{2}$ degrees the other $22\frac{1}{2}$ degrees being, as it were, wasted.

In case you wish to find the longest focal length of lens that will photograph the end of a room on a plate of a given size you may do so in this way: Say that we have a camera using 4 x 5 plates and wish to use a lens of the longest possible focal length and still include the end of a room that is 12 feet wide and 18 feet long. Let us allow four feet for the camera and photographer, which will leave 14 feet from the lens to the end of the room. Place the square on the line O-B as before, and measure off 14 inches as the length of the room, using one inch for a foot. Now with the other blade measure 6 inches up as half the field of view and place a dot. With a straight edge from the dot to the point marked O we find that it crosses at a point marked 23 degrees. With a square on the line O-B move it until half of the length used, or $2\frac{1}{2}$ inches in this case, intersects the line of straight edge and the part of the square along the line O-B indicates the focal length of the lens to use, which in this case is $6\frac{1}{4}$ inches. If using a plate that is 8 x 10 inches we find that a lens of $11\frac{1}{2}$ inches focal length is necessary to cover the entire plate, giving us a much larger image.

Suppose that we have a lens of $9\frac{1}{2}$ inches focus and wish to take a picture of the end of the above room and use a plate of the correct size without waste. Measuring as before we get the angle of view as 23 degrees. Place the square with a blade on the line O-B with the focus length of $9\frac{1}{2}$ inches marked off. Now on the vertical blade the point of intersection with the straight edge gives us four inches or half the length of the plate to use, in which case we would use a $6\frac{1}{2}$ x $8\frac{1}{2}$ plate.

SIGHTING YOUR LENS.

While a certain lens may be described by the manufacturer as having an angle view of, say, 60 degrees, it seems that it should read field of, or degree of, 60, or angle of view of 30 degrees, as that is the angle of vision, or rather it is the angle that a straight line would take from the extreme outside of the field of view to the center of the lens. The angle view of a lens is understood as being that part, or number of degrees, of a circle photographed when focused at infinity, using the largest stop, and the largest plate that the lens will cover



"HOME PORTRAIT." CHARLES H. DAVIS, NEW YORK



"PORTRAIT." THE HOLLER STUDIO, BROOKLYN, N. Y.

properly. Consequently it would appear that this should be spoken of not as the angle of view, but as the degrees or field of view.

As mentioned before, a set of sights on a camera, indicating the angle of view of the lens, is a great help when focusing towards judging the distance that the camera should be from the object to be taken, without the trouble of viewing the ground-glass and then moving until the proper distance is reached. When using sights, the camera is held on a level with the eyes as the photographer walks towards the object to be taken. When the sights indicate that the subject fills the field of view, the camera is then set up and focused without further ado. There will be little variation in the field of view for objects not closer than 10 feet, but if closer than this the focusing should be done without the sights. This variation will be explained later.

When applying sights to a camera, it is necessary to first find the angle of view of the lens, which may be done by the method already described in drawing B. In case the focal length of the lens is not known it may be found in the following way:

The camera is first focused at infinity, and if it has a focusing scale the indicator should point to 100 feet. If it does not, the scale needs correcting. If there is no scale, make a mark on the camera bed and another exactly even with this on the part that is moved with the lens. The camera lens should next be focused on some object, such as a postage stamp, until it appears natural size on the ground-glass. With a rule, measure the distance that is now between the two marks, and the result will be the focal length of the lens. Care should be used that the focusing is done with the lens only and not the back, as is done when using an extension bed-back. If an extension bed-back is employed it should first be racked to the rear of this and left.

With a compass draw a half circle and divide it into degrees as shown in drawing B. When the degree of view is found, indicate it on this half circle with heavy lines. The drawing is now placed on the top of the camera with the line O-B exactly over the center of the plate and lens. By sighting along the heavy lines you can now see the field of view that would be included in the picture. When the drawing is in correct position, as proved by consulting the ground-glass to see if the lines agree with it, a tack is placed at O and another on each of the heavy lines near the front of the top and your sights are ready for use.

If using a three-inch focus lens, wide angle, telephoto, and other auxiliary lenses, the camera may be sighted for the whole at one time, if the focal length of each is known, or determined by the drawing. In this way the photographer can tell instantly just what lens would give the desired field of view from any point of view. It will, of course, be necessary to employ some means of indicating which sights are used with each lens.

It is well to remember the following points:

A lens with a focal length that is half the diagonal of the plate used will give a field of view of 90 degrees.

The angle of view of a lens of a certain focal length is varied according to

its distance from the plate when focused on close objects. This is due to the fact that the lens must be racked further from the plate for focusing for close objects, consequently the rays of light pass to the corners of the plate at a longer angle. For example, a lens of six inches focus that will cover a five-inch plate (5 inches the long way) has a degree, or view, of field of about 44 degrees, or an angle view of 22 degrees each way from center. When copying an object to natural size with this lens the plate and object must each be 12 inches (or twice the focal length of the lens) from the optical center of the lens. Place the drawing that was used when sighting the lens on top of the lens with the point marked O over the optical center of the lens and the line O-B in line with the center of the plate. By placing a straight edge from the outside of the object copied to the end of the plate we find that it crosses the circle at a point marked 12 degrees, which gives us a field of view of 24 degrees and an angle of view of 12 degrees as the rays of light pass from the center of the lens to the end of the plate at the same angle that they are received. The reason for this change in the angle of view is that the lens is really doing the work that a lens of 12 inches focus would on the same size plate if focused at infinity.

One might think that because a lens has a field of view of 90 degrees, if its focal length is half the diagonal of the plate employed, that a lens of the same focal length as the diagonal of the plate would give a field of view of 45 degrees as the decrease of view is to the increase of the focal length. This is not the case, however, as a moment's thought will show. We will say that a lens of 4 inches focus will give a field of view of 90 degrees when used with a plate that is 8 inches long. This means that the image is in focus when the ground-glass is 4 inches from the optical center of the lens. Now if we change and use a lens of 8 inches focus, the optical center of the lens must be 8 inches from the plate, but we find by referring to drawing B that a lens of 45 degrees field of view will only cover a plate that is $7\frac{1}{2}$ inches long when properly focused on the plate at 8 inches, so in order to cover the 8-inch plate we must use a lens of shorter focus to increase the angle of view, or else employ a lens of $9\frac{1}{2}$ inches focus if a field of view of 45 degrees is wanted.

The angle of view may be increased by using a small stop to increase the depth of field and racking the lens back as far as possible and still retain correct focus. It may also be decreased in the same way if a larger image is wanted upon the plate with the camera at a given distance from the object to be taken. This variation in the angle of view varies according to the kind of lens used, as a rapid rectilinear lens has more depth of field than an anastigmat. This is also true with lenses of short focal length.

When figuring a lens for a room of a certain size, it is well to allow for the decrease in field of view that occurs when a lens is not focused for infinity, and select one of slightly shorter focal length than is indicated by the drawing.





"DUTCH FISHERS." R. LICHTENBERG, OSNABRUCK



"THE BROOK." HERMANN LINK, WINTERTHUR, SWITZERLAND

DEVELOPMENT MADE EASIER— FREDERICK D. BART

IF you are one of those who enjoy standing in front of the dark-room light and rocking a tray for hours at a time while the day's exposures are being developed, you will probably not be interested in this article. On the other hand, if you are desirous of getting your negatives through in the shortest space of time consistent with the best results, the accompanying photograph and sketch will illustrate a method of development possessing all of the advantages of both tray and tank, as well as great economy of time and developer. The holder for the negative is what is known as the Core Plate Developing Rack, now marketed by the Eastman Kodak Company, while the tank was built according to my sketch to handle the amount of work which we have to do, holding four plates at one time and requiring six quarts of developer to fill.

In actual use we set this tank in the dark-room sink before the ruby light, filled with a solution of pyro developer, and as fast as plates are exposed they are inserted in one of the developing racks and dropped into the tank, the cover placed in position and the white light turned on in the dark-room for any other work which may be done while the plate is developing. With a Standard Orthonon plate, the development will be complete in from four to five minutes, although with some other plates it may require from seven to ten minutes. When there are a number of exposed plates on hand, the capacity of the tank for four plates may be utilized, and as fast as one is developed another is inserted to take its place. The saving of time in this way is greater than one would realize; as the operation is continuous, one plate following another into the tank as fast as development is complete, no time is lost in mixing developer for each plate, and the white light in the dark-room can be turned on at any time when the cover is on the tank, permitting other work to be done while development is proceeding.

The developer which we have worked out as best suited to our needs for all-around work is the following:

Potassium metabisulphite.....	90 grains
Pyrogalllic acid.....	1 ounce
Sodium sulphite (Anhydrous).....	2 ounces
Sodium carbonate (Anhydrous).....	1½ ounces
Potassium bromide.....	15 grains
Water to fill the tank.....	6 quarts

We dissolve the metabisulphite in about sixteen ounces of water and add the pyro, the balance of the chemicals are dissolved in a quart of warm water, the two solutions are mixed together in the tank, which is then filled with water to bring the temperature to about sixty-five degrees. This developer we leave in the tank and use for three days, in which time it will develop at least forty to fifty 8 x 10 plates and will successfully handle any ordinary commercial or portrait work, including copies of line drawings if made on

process plates. The latter will require quite a long development, but every particle of silver which has been acted on by the light will be reduced and the negative will be as crisp as by any method of development which I have ever tried. The one thing which I should hesitate to handle with this formula would be the development of a plate where much halation is liable to occur, such as an interior taken against the strong light of a window. My way of handling these is to give a very full exposure for the shadows and develop in pyro-acetone with a minimum amount of the latter, starting with three or four drops.

Some of the pitfalls which we have discovered in actual usage of the tank are: Pyro-acetone does not seem to be successful because of a tendency to cause light streaks in the negative; we lost several through this fault, which disappeared as soon as sodium carbonate was substituted for the acetone.

To prevent a scum forming on the surface of the developer when not in use, we had a wooden block made, painted with Probus paint, which will just fit inside of the tank and floats on the developer, protecting it from the air. After the block has been removed, preparatory to developing, should any scum have formed around the edges, it may be easily and quickly skimmed off with a piece of glass or blotting paper before the plate is inserted. If the scum is not entirely removed, it will adhere to the surface of the negative and prevent the developer from acting thereon, causing transparent spots. It is a peculiar fact that this scum will always adhere to the film side, never to the glass side, where it can do no harm.

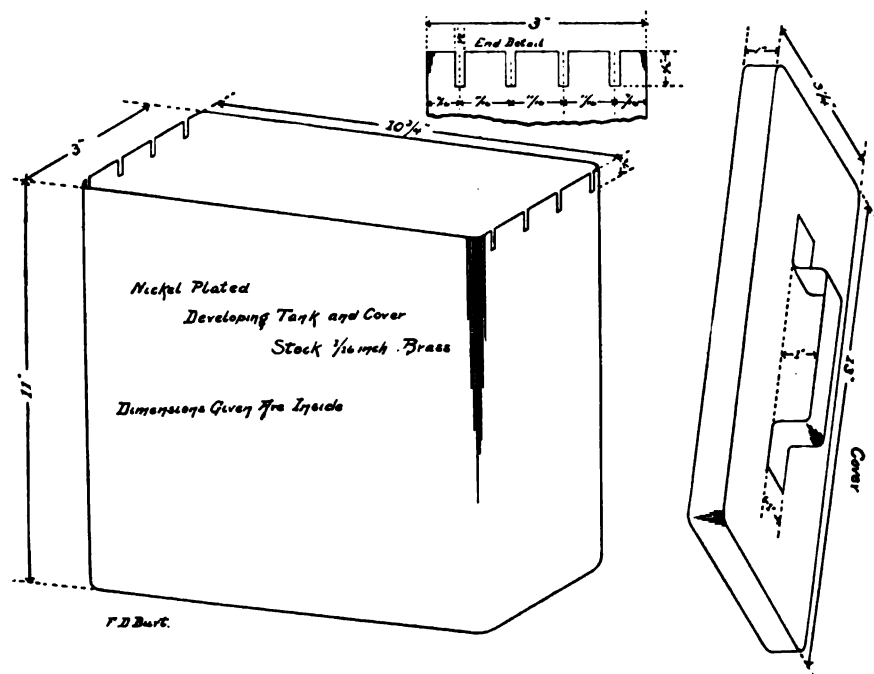
If the negatives are not lowered very slowly and carefully into the developer, air bells will be formed, with the usual result, but they are easily prevented with a little care in immersing.



The developer should be well stirred before the first plate is inserted, after which the act of raising the plates for inspection will agitate it enough for all practical purposes.

The formula given is the one which we have worked out as best suited for our general run of work, though we may possibly modify it at some future time. As there is a great saving of pyro, one ounce developing from forty to fifty plates instead of sixteen as by the tray method, the tank is bound to pay for itself in a reasonable length of time, aside from the fact that anything which will economize our present supply of developing agents is worthy of the attention of every photographer.

To further extend its usefulness, I had four special racks made with a grooved division down through the center to hold two 4 x 5 or 5 x 7 plates



side by side, while another addition, which might well be made for summer use, is a water jacket into which the tank could be placed to keep the temperature at a reasonably uniform point.

This is simply the story of my own solution of the developing problem, few of the ideas being original, but collected from various sources, while there are a thousand other variations which might be made to suit individual conditions or tastes, but the principle would be the same in all. The reason that I had the tank made, instead of buying one of the several that are offered on the market, is that all of the latter, which I have seen described, are too large to be economical of developer for the number of plates which we have to handle, nor have I seen one with the light tight cover, which is a great convenience.

A combination of hydroquinone and pyro is recommended by the Eastman Kodak Company, who also suggested the idea of the floating wooden block to prevent oxidation of the developer, but as I had already started my experiment with the straight pyro, I have not yet tried the combination. The developer might be made as much weaker than my formula as is desired, but it is often advisable to develop a negative immediately, to make sure of the result, in which case one does not care to have to wait too long to see it. Also, a strong developer is advisable for the line work on process plates, but is not too harsh for the Standard Orthonon, which is a soft working plate.

I feel sure that any photographer, who will make an intelligent effort to adapt the above method of development to his own work, will feel more than satisfied with the results obtained, and never be willing to go back to the use of a system which involves the constant rock, rock, rock, rocking of a tray. The more of the drudgery which we can eliminate from photography, the more we can enjoy our work and the fresher our minds will be to grasp and solve the problems which are constantly presenting themselves.

WHAT SHALL I BUY TO START?— C. H. CLAUDY

IN no hobby with which I am familiar does the itching desire for more apparatus, more supplies, new accessories and better tools need so much scratching (of the pocket-book) as photography.

The shelves, counters and show windows of a well-stocked photographic supply store are a constant temptation, even to the advanced amateur who knows what he wants and who has learned how to make the available photographic appropriation go the limit. How much more a temptation, then, is such a display to the person just bitten by the photographic bug, and who wants nothing quite so much as everything photographic in sight!

To their credit, let it be said, most supply houses will guard a too rash or impulsive customer against unwise purchases. The well-run photographic supply house is not in business for the moment, but for all time, and knows well that a customer, once loaded to the limit with photographic paraphernalia, which later proves of no use, is not thereafter apt to be a customer of theirs. But the supply house clerk cannot always tell that a customer doesn't know what he wants—it is a peculiarity of the photographic beginner that he longs, with all his soul, to appear as one deeply versed in the magic art of red light and sensitive plate. With uncanny skill he conceals his ignorance, and often succeeds in deceiving the very man he ought not to deceive and getting away with a lot of dollars' worth of photographic junk he cannot use.

Not long ago I was led into the dining-room of a friend, who had just found out that he had missed three-fourths of his life by not being an amateur photographer. On the big dining-room table was spread out his outfit, which he had bought, so he proudly informed me, in an hour's shopping at one store.

It would have been pathetic, if it hadn't been so funny, and I have been unkind enough to make notes of what was there displayed as the outfit for a beginner who had never taken a picture. This was the outfit:

- One Kodak, postal card size.
- One five by seven view camera.
- One anastigmat lens, seven-inch focus.
- One anastigmat lens, twelve-inch focus.
- One anastigmat lens, twelve-inch focus.
- One telephoto lens, to fit the twelve-inch combination.
- Two tripods.
- Six trays.
- Fixing bath.
- Washing box.
- Print washer.
- Six printing frames.
- Four graduates, assorted sizes.
- One dozen bottles with glass stoppers—six pints, six quarts.
- Five gross of Velox, two sizes and three surfaces.
- One dozen squeegee boards.
- Retouching desk.
- Retouching dope and tools and book of instructions.
- Enlarging lantern.
- One gross enlarging paper, eleven by fourteen. (One grade and surface.)
- One set of books of instruction on photography.
- Twelve rolls of films.
- Ten pounds of hypo.
- Six boxes of plates.

About thirty packages of chemicals of all kinds, including stuff like permanganate of potash, perchloride of iron, oxalic acid and a lot more things never used by a beginner.

- Film pack tank.
- Ruby lamp, electric.
- Film pack adapter for plate camera.
- Electric printer.
- Film tank.
- Electric dryer.
- Plate tank.

Ray screens, tripod stays, scales and weights, spatulas, glass slabs, swabs, rollers, brushes, mounts, paste—all the accessories the salesman could think of.

My friend—who is wealthy and can afford it—was perfectly happy. That he had spent between four and five hundred dollars, when between forty and fifty would have been more than enough, made no difference to him. Nor did I try to undeceive him as to the wisdom of his purchase. Indeed, I complimented him on his choice, because everything he had was standard goods. He had bought nothing which wasn't worth the money and nothing

which isn't of use—to a man who knew how to use it. I left him to work out his own salvation, and so far as I know he is still at it. I venture to say, however, that the telephoto combination and the enlarging lantern, the electric printers and dryer and the oxalic acid and perchloride of iron, not to mention half a dozen varieties of developers and toning solutions, are still sealed mysteries.

It seems to me that any beginner—any man, woman or child who buys for the first time—ought to be able to get over that desire to appear learned long enough to tell the clerk how inexperienced he or she may be, and thus get the kind of treatment which will insure a continued love of the art of photography. Failing that, it seems something like a sacred duty to print here a warning to the uninitiated.

You will want, of course, some sort of a camera. You can make a choice between plate and film, pocket and stand. For the sake of ease of learning, you are advised that plates cost less than films and that films are lighter and more handy to use than plates. It makes little difference which kind you choose so that you don't choose both at once. You will want, to develop your plates or films, the following: three trays, package of hypo, of hardener, of developer, ruby lantern—and *that is all*.

Or, you can buy a tank. The tank is the easiest way to develop, but robs you of the supreme delight of watching your negatives develop under the ruby light. If you buy a tank, you can eliminate the trays. If a plate tank, you must still have the ruby light.

To print your negatives after you have made them, you will want *one* printing frame, *one* package of paper, either blue print or Solio to start with, a toning and fixing bath for the latter, also *one* squeegee board and roller, some cotton and a solution of paraffine in gasoline—and that is all.

You do not want to begin your photographic career with a fine lens. It's thrown away on you. You don't know enough to appreciate it—you couldn't tell the difference on the ground-glass between the image it forms and that made by a single uncorrected glass, because you haven't experience. You have no use for a wilderness of chemicals and processes, and to get hold of them is almost certain to spoil a very great pleasure for you by making complicated a matter which is really simple.

There is nothing hard about *beginning* to take pictures. If you keep your outfit *simple* and try to go *one* step at a time, you will have a bully time. If you jump from a try at a telephoto picture to the making of a Rembrandt lighting indoors; if you alternate platinum and Velox and Solio and carbon and make failures of all; if you find you have spent a lot of money for a lot of apparatus and from all of it together you cannot get one decent picture in a dozen tries, *of course* you are going to be disgusted and quit.

Having mastered the elements of picture making with *one* simple instrument, *one* developing process and *one* kind of paper, you are ready to expand a little. Try Velox or other gaslight printing paper next. And it is for the sake of your joy in this simplest and most fascinating of printing processes

that I like to see you start negative making with tray and red lamp, rather than with the more effective and easier tank. For the making of a Velox print is exactly like the making of a negative; that is, the print and negative are both immersed in a developer in a tray, both rinsed in clear water, and both put in the same kind of hypo bath to fix. Being familiar with the operation with a film or plate, using paper in the same way comes easier.

Don't buy a printing machine until you have mastered printing with a frame.

Don't buy an anastigmat lens until you have educated yourself to the point where you yourself feel a lack in the lens you have.

Don't buy a telephoto attachment until you know how to make first-class negatives, and how to judge exposure, understand stops and stop values and know what a telephoto is really good for and what it is no good for.

Don't buy any chemical until you have use for it.

Don't buy paper by the gross until you know what paper you like and are successful with.

Don't let any dealer load you up with a lot of apparatus you don't understand.

Don't try an enlarging lantern until you have watched the process of enlarging in an expert's hands and decided you are ready to take it up for yourself.

Don't let any dealer persuade you to this or that set of books on photography until you have some experience. The little book, which comes with your camera, a twenty-five cent beginner's manual, is all that you want at first. When you get so you can tell a rear combination from reticulation or feel you cannot live another moment without some author telling you the relationship between a dioptré and dichoric fog, then go get an encyclopedia, by all means.

But in the meantime go to a good supply house. Come out flatfooted and say "I don't know a thing about photography. I want a simple, easy *beginner's* outfit, inexpensive yet efficient. When I learn something I'll want a better one, but now—simplicity."

And if your supply house is worth its salt, it will try to sell you, not the *most* it can screw from your open and defenceless pocket-book, but that which will *best serve* your present and their future interests—one simple camera, and the least possible of trays, chemicals, paper, lights and printing frame, with which you can take your first steps in the most engaging, most satisfactory most tantalizing and most well-repaying hobby that exists in the world today.



PAPERS FOR BEGINNERS—CONTINUED

THE photographic camera has been compared with the eye. The eye certainly is a camera, but one of a peculiar nature, and there is considerable difference in its mode of working from the action of the eye in seeing things, and it is well for the beginner to understand the character of the image formed on the retina and that on the ground-glass. Both the eye and the camera are provided with a lens, but the perspective which the eye gives with its lens is spherical, and that by the objective of the camera is plane.

If the image formed upon the retina is observed you will be surprised to note how distorted, photographically, the picture appears. Straight lines are bent barrel shape, and if a prepared plate was placed in the plane of the picture it would never pass muster as a good photograph. But we do not see the mullions of the window pane distorted, but perfectly rectilinear. The lens of the eye, therefore, we would class along with poor single lenses which have this distortion and register it, but the eye corrects it—the lens shows only one point sharply of about one one-hundredth of the focal length extension. We see an object distinctly by the muscular action of the eyeball, which allows it to turn gradually to all points of the object. We see everything with the center of the visual axis, and the facility with which the eye moves in its socket and surveys all points of the object is most astonishing. The shortage or imperfection of the eye lens as a piece of optical workmanship is counterbalanced, and indeed more than counterbalanced, by this wonderful mobility of the apparatus. Thus the picture which we perceive is composed of impressions successively taken up by the retina and combined. A straight line is thus seen by the eye because we look gradually at each point in the line, notwithstanding it is curved at one impression when it is projected upon the retina. The muscular movement necessary for this governs our perceptive sense. In the photographic lens, the corrected lens we mean, there is not present this curvature because we have a flat field, and because it is the record of a single impression only. When we travel in a railway train we see all the details of the landscape, which are not too close, on account of this power of accommodation of the eye lens. Our vision is focused upon the landscape, and really takes no account of what is close to the eye. Even the jarring of the train interferes but slightly with our observation. But if we take an opera-glass and look at the scenery we see a mere blur and a dancing of the objects; a view from a moving train must be made at a high speed.

It is at times argued that pictures taken with excessive wide-angle lenses are correct, if the observer will only view them from the distance of the focal length of the lens they were taken with. The argument is futile. No picture taken, say, with a 90 degree angle is looked at from a distance of half its length. Everyone selects a point of view at least twice as long as the picture, but the perspective distortion will then distinctly appear and the picture will not look natural.



"BOY WITH APPLE." FIRST PRIZE IN THE CAMERA COMPETITION FOR JULY
MYRA D. SCALES, TEMPLE, MAINE

A very pleasing composition, well studied to give a natural effect. The spacing is excellent, and the illumination of the face skillfully managed so as to have nice modulation of shadow and soft high lights. The face is also of good tonal value in relation to the drapery, which latter also is in the right key of illumination.



"THE ENTRY OF SUMMER." SECOND PRIZE IN THE CAMERA COMPETITION FOR JULY
E. D. LEPPERT, JUNCTION CITY, OREGON

The suggestion of movement is well indicated. The action of the figure is properly expressed, and its position in relation to the surroundings such as to give an idea of progression. The lighting of the figure is excellent, and the general atmospheric treatment such as to give the feeling of openness and out-of-air surroundings. The eye is led into the distance and the spectator journeys right into the scene.

THE EFFICIENT EXPOSURE OF A PHOTOGRAPHIC SHUTTER—E. A. SALT

THE following is an abstract of a lecture given by Mr. E. A. Salt, at the Croydon (England) Camera Club. In very simple language it deals mainly with a subject which many find obscure.

The efficient exposure given by a photographic shutter is one of those rather elusive ideas which tend to reverse themselves in an ordinary mind, and I must confess more than once I have mentally grasped the wrong end of the stick when considering its relationship to the speed of the shutter and the exposure thereby given to the plate.

It is one of two distinct factors in connection with photographic shutters, definitely related to each other but better considered as almost apart. The first is known as "duration of exposure," generally termed the "speed;" the second is the "equivalent exposure," or, as usually phrased, the "efficient exposure." I have never been clever enough to define the latter except in relation to the former. The duration-of-exposure may be defined as "the period which elapses between the first uncovering and final closing of the lens," merely a period of time, which if known, in some cases, will not give exact information as to whether a plate has been correctly exposed or not.

This point may be illustrated by taking an extreme case. Suppose a drop-shutter is constructed with a pinhole as the exposing aperture, which is passed in front of the lens so that light is allowed to pass and illuminate the plate for 1-20th second. Next, the hole is enlarged to, say, one inch and is passed across the lens so that light is transmitted to the plate for 1-20th second as before. In both cases the duration-of-exposure will be identical, but the amount of light impinging on the plate will be vastly different. This somewhat absurd example is simply intended to emphasize the fact that the duration-of-exposure relates merely to "time" and need not have any absolute relationship to the exposure of the plate, which is governed by the efficient exposure only.

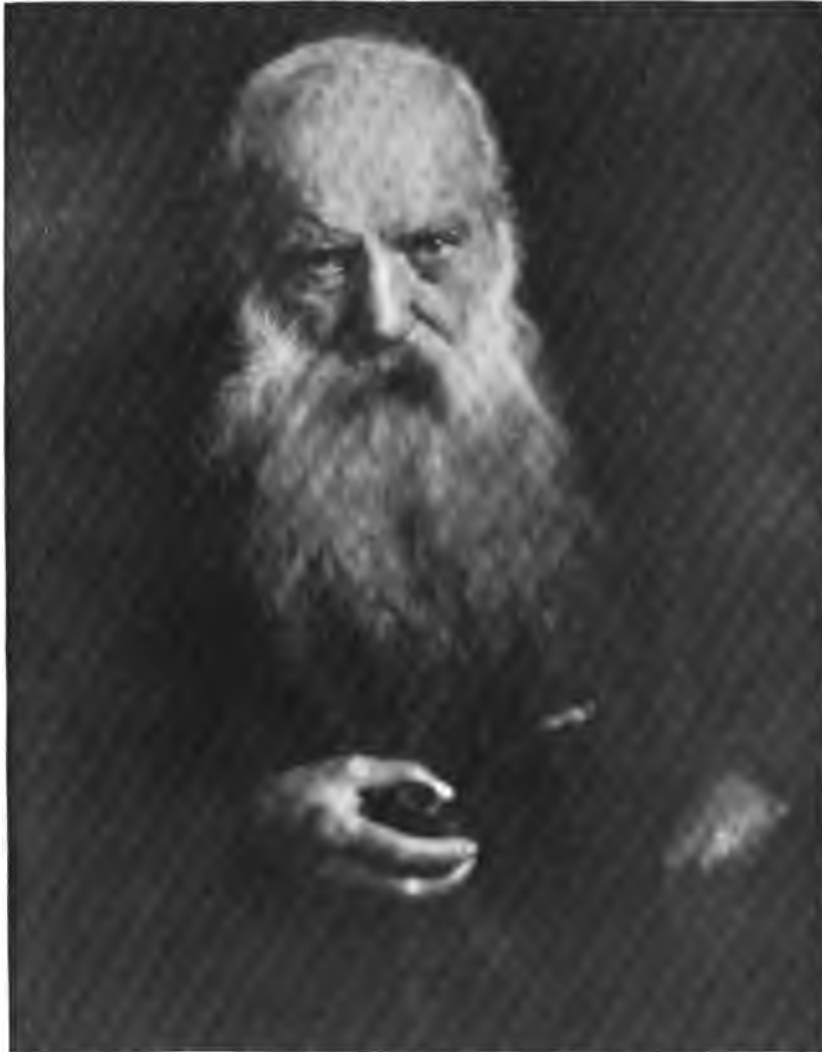
The efficient exposure, loosely may be defined by saying it is represented by the exposure given by an ideal or perfect shutter of 100 per cent efficiency, one which opens in no time and takes no time to close. The lens, therefore, is acting at full aperture it is set at during the whole period of exposure, a condition of affairs impossible to realize, but at slow and medium speeds, with some shutters, practically obtained. With the hypothetical ideal shutter it is obvious that the duration-of-exposure and the efficient exposure coincide. Excluding the focal-plane shutter, which may be deemed to uncover the plate instead of the lens, all shutter blinds, blades, or leaves take time to uncover and cover the lens, during which period, light which would be transmitted to the plate by the ideal shutter, is being obstructed by the moving blind or leaves of the less perfect instrument.

Let us suppose that we have an old model of an iris shutter—this opens in true iris form, stops to the aperture it is set at, and closes again. That is,

if the stop is set to $f11$, the leaves will open to a diameter representing this aperture and at once begin to close. With slow exposures the leaves move slowly up to the aperture set, and without any pause close in the same deliberate way. At higher speeds the leaves proportionately accelerate. Now, contrast this shutter with our ideal shutter, both set at, say, one second. With the latter, as the leaves are assumed to take no time to open and close, the efficient exposure, as we have just seen, is one second also. With the former the case is entirely different, for at all the speeds or duration-of-exposure the leaves obstruct two-thirds of the light, which, if they had opened and closed in no time, would have reached the plate. It is evident that, with this shutter, to secure the same amount of light-action on the plate as the ideal one would afford, we shall have to give three seconds' exposure. Although the duration of exposure is one second the efficient exposure is only one-third second, for our ideal shutter in this time will pass the same amount of light. Hence the term "equivalent exposure," which is synonymous with "efficient exposure." Disregarding a modifying factor which cannot be gone into here, this type of iris shutter has the low efficiency of $33\frac{1}{3}$ per cent.

Nevertheless, it has two valuable features, one being that greater depth of focus is obtained than in other forms of diaphragm shutters, the other being that the ratio of the duration-of-exposure to the efficient exposures is always constant. For example, "durations" of 1-10th and 1-20th second respectively will have 1-30th and 1-60th second efficient exposures, and so on. Being true for all speeds, the stops preserve their relative value to each other, which is not the case, at high speeds, with types like the "Unicum" and "Compound."

With the roller-blind shutter, when we stop the lens down, the duration-of-exposure becomes shorter, but the efficient exposure remains the same. At first sight this sounds a bit of a puzzle; what is going on may be illustrated as follows:—Suppose the aperture in the blind to be $1\frac{1}{2}$ ins. long, and we have stopped the lens down to $f64$, which with a short focus lens will be such a minute aperture that for all practical purposes we can consider it uncovered and covered in "no time." Or to put it in another way, the period occupied in opening and closing is so short, compared to the time the stop aperture remains fully open that we may disregard the period of opening and closing and reckon the shutter to have an efficiency of 100 per cent. This being so, the duration-of-exposure and the efficient exposure will be the same, and if the former be 1-50th second the latter will be 1-50th second also. But, as has just been stated, the blind takes a longer time to uncover and cover a large stop than a small one, and if instead of using $f64$ we open the lens out to $f8$, the duration-of-exposure, originally 1-50th second, may be decreased to 1-30th second, but the efficient exposure will remain at 1-50th second. The fact is the shutter gets less and less efficient as the diameter of the stop approaches the length of the blind aperture—if they are the same length the shutter will only possess 50 per cent efficiency. So we see with this shutter the duration-of-exposure increases as the iris is opened out, and its power to arrest motion decreases. The old drop-shutter, and those shutters in which a blade with a



"PORTRAIT." THIRD PRIZE AWARDED IN THE CAMERA COMPETITION FOR JULY
T. W. KILMER, NEW YORK CITY

A good characteristic head study. The textural quality of the flesh and hair is excellent. The illumination is also well considered to bring out the character of the subject and the thoughtfulness of expression incident upon age. The spacing is good, but in the treatment of the hands there is room for improvement. They interfere with the repose of the picture just where repose is wanted.



"OUTDOOR PORTRAIT." FIRST PRIZE IN THE BEGINNERS' COMPETITION FOR JULY
MRS. L. P. VAN WOERT, CORNING, N. Y.

The general pose of the figure is natural and pleasing, and the boyish expression all that could be desired. The spacing is properly considered, so as to give good balance to the picture. The landscape setting is well in accord with the subject, but it might have been kept in a lower tone to the better emphasis of the figure. The atmosphere and relief would then have been better indicated.

constant aperture in it uncovers the lens or the diaphragm, approximately have the same characteristics as the roller-blind shutter.

A most useful feature of these types is that if, by means of a suitable shutter-tester, we record the duration-of-exposure at a very small stop, we can mark the speed indicator with the "durations" thus obtained. The actual speeds or durations-of-exposure will be only true for this stop, but the numbers, or fractions of a number, will show the efficient exposures for all stops. In nine cases out of ten, photographers would prefer the speed indicator marked to show exposures in terms of light-action on the plate, rather than representing mere durations-of-exposure bearing an indefinite relationship to such exposures. In high-speed focal-plane work this requirement may be reversed and a certain duration-of-exposure may be compulsory to record a fast-moving object without blur. Therefore at ultra-high speeds very high efficiency is badly wanted and generally is not obtained.

In the case of the focal-plane shutter, as is well known, if the blind is almost in contact with the focal-plane nearly 100 per cent efficiency is secured, and once again the duration-of-exposure and the efficient exposure coincide. If the aperture in the blind be a wide one some little distance may separate it from the focal-plane, and the same remark applies. But, speaking generally, if the blind is appreciably advanced beyond the focal-plane the efficiency drops materially, and it may well be that with a narrow slit the efficiency drops to 50 per cent or less under ordinary working conditions. It really is about time that the 100 per cent myth should be decently buried. If there were no text-books the delusion might never have arisen.

Mr. C. Welborne Piper, has shown that as the distance between blind and plate is increased, though the "duration" increases and the efficiency lowers, yet the efficient exposure remains the same. To take an extreme case with figures simply employed as an illustration, not as representing definite facts—a saving clause which avoids a lot of brain pressure—assume (it is an unwarrantable assumption), with a narrow slit almost in contact with the plate, a duration of 1-1000 second is realized. Regardless of any injury to the camera, let us join the shutter close to the back combination of the lens, so that the narrow slit traverses its diameter. Here the duration-of-exposure may lengthen to 1-100 second, but the light-action on the plate will be the same as if the blind were in its original position. Lens roller-blind shutters have been constructed on the narrow slit principle, a slit considerably less in width than the lens aperture, being used to obtain quicker exposures than otherwise would be possible. Such a system can only be described as a mean fraud on an unsuspecting plate.

Finally we come to the type of shutter represented by the "Compound." The three operating leaves open to a constant diameter, with constant high velocity at all speeds. Taking it for granted that the top speed reached 1-200th second in a small model, it obviously follows that the leaves must open and close in that time. Therefore, at slow and medium speeds, to all intents and purposes, they remain fully open for the whole period of exposure, and we can esti-

mate the duration-of-exposure and the efficient exposure as one and the same, also that the stops of the lens will preserve their relative value to each other. At high speeds this is not the case, for if we set the lens aperture to the maximum opening of the shutter, say f 5.6, and give an exposure at top speed, and then stop the lens down to f 11.3, and repeat the same speed, the plate will by no means receive exposures in ratio to the two f values, viz., 4 to 1. The explanation is simple—at the large stop there is no period of full opening of the lens. Let us assume the efficiency to be then $\frac{1}{3}$ (in reality it will be somewhere between 50 per cent and $33\frac{1}{3}$ per cent). At the aperture of f 11.3, as the stop has a considerable period of full opening—represented by the time the leaves take to open beyond this aperture to f 5.6, and close down to it again—the efficiency is increased to two-thirds; in fact, just doubled. Under ordinary circumstances if a reduction of aperture is made from f 5.6 to f 11.3, the light-intensity is reduced to one-quarter, but in the case supposed the reduction of aperture has doubled the efficiency of the shutter and the reduction of light-intensity is halved only.

These figures were given as an illustration of what happens with an iris shutter in the "B. J." some years ago, but they apply approximately to all shutters opening from the centre to a constant diameter. They show there is no definite ratio between the duration-of-exposure and the efficient exposure at high speeds, and the stops lose their relation value to each other. The point, perhaps, is of more interest than of real importance, as at high speeds the full aperture of the lens is usually employed; still it is useful to bear it in mind.

The "Unicum" and its three-leaf successors have the same properties as the "Compound," but are not quite so efficient for high and medium speeds, as the leaves have less velocity. Goerz's sector shutter opens in true iris fashion to the stop value set, but, unlike earlier iris models, the leaves move with great velocity at all speeds, giving high efficiency at medium and slow speeds. Though beautifully made, it has one fundamental defect in design, for the driving spring has less work to do in opening the leaves to a small stop than to a large one. In the past, tests have shown with high speeds, when the stop was set to f 16 the duration-of-exposure was materially shorter than when set to full aperture.

In fairness it ought to be added that some focal-plane shutters work at much higher efficiency than others. For instance, a roll-film camera made by the Eastman Kodak Co., has the blind very close to the focal-plane; it runs horizontally the long way of the film, uniformly and smoothly. —*The British Journal of Photography*.





"THE NOBLE REDMAN." SECOND PRIZE IN THE BEGINNERS' COMPETITION FOR JULY. FOSTER LARDNER, PROVIDENCE, R. I.

The characteristic features of the subject are well brought out and the interest increased by the appropriate surroundings. The Indian is in his proper environment, and though a little formal in his pose, interprets well the ethnological traits of the red man. Technical quality excellent.



**"HERE HE COMES!" THIRD PRIZE IN THE BEGINNERS' COMPETITION FOR JULY
EDWARD J. BROWN, NEWARK, N. J.**

The general pose is good, but the composition is somewhat out of balance. There is an unpleasant suggestion of the possibility of the tilting up of the bench, although the vacancy suggests reservation for the one approaching. The left arm is not managed with much grace, and the pamphlet in the right hand could be left out, much to the advantage of the composition. The pamphlet, with the hands and feet form five unpleasant bright spots in the picture.

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

VARIOUS METHODS OF FIGURE DELINEATION

THE most popular way, of course, is to snapshot at any figure or group that one comes across and that seems of sufficient interest to be worthy of a record. "The 'Hot Dog' Man" is a good example of this order of interpretation. It was taken on an August afternoon about 2 P. M. in full sunlight, with a Kodak.

Records of this kind have a decided illustrative value. There is not much chance for serious, or shall we say, pictorial composition. No matter how long we may wait, the figures will rarely assume attitudes that furnish a perfect composition, and should we try to pose them, we only augment the trouble. We generally lose as much as we gain. We have to be satisfied with a mere report of facts and excuse the errors. For that very reason a small print is more satisfactory than an enlargement. What we look for in a street scene is realism, a reproduction of actualities, a representation that gives us information about some incident, occupation or animated traffic. A small-sized print



"THE 'HOT-DOG' MAN." DONALD C. FITTS

does this more readily. As soon as the same print is enlarged we become conscious of the defects, as an enlargement invariably swallows up some detail and exaggerates bad drawing.

An entirely different method of figure delineation is the decorative style, as exemplified in "Thy Will is Mine," which was taken during a Granville Barker performance of "Iphigenia" at Yale College. A 4 x 5 Graflex, rear half, 9-inch Verito, 14 inches focal length, *f*5.6, (time 4 P. M. in May), were the vehicles of expression.

In such a process the figures become mere spots against a more or less picturesque background. At this special instance the background in itself has true pictorial value, and you will notice that the figures, small and vague as they may be, dominate the composition. The large background gains significance only through them. The print is not a good illustrative record of a theatrical performance in the open, and perhaps did not intend to be. By this we mean that it does not particularly illustrate the momentary scene, but rather gives a general impression of a stage effect. Much depended on the placing of the figures as telling notes in the general scheme. But as the photographer on this occasion had to deal with actors, whose business consists largely of posing, he had little to do but wait for a favorable grouping. The print lost a good deal in the enlargement.

The "Foggy Afternoon" is a very curious production. It is a new note, and I do not remember ever having seen anything exactly like it, and I would advise nobody to imitate it. It is too unique an effort. But it teaches the lesson that moving figures out-of-doors, unconscious of being photographed,



"THY WILL IS MINE." DONALD C. FITTS



"I'VE SO TIRED AND SLEEPY." FIRST HONORABLE MENTION IN THE CAMERA COMPETITION FOR JULY. J. HERBERT SAUNDERS, LEEDS, ENGLAND

This is a charming child study and handled in a very skillful way, so as not only to give it much pictorial value, but also to add special interest by the perfect naturalness and naivete of the little model.



"THE GIRL AND THE DOLL." SECOND HONORABLE MENTION IN THE CAMERA COMPETITION FOR JULY. MRS. WILMA B. MCDEVITT, WASHINGTON, D. C.

A good child study, expressed with taste and sympathy. The general pose is easy and natural, and the management of the light excellent, so as to bring out the expression. The doll is a proper associate with such a subject, but it detracts our attention from the child by its over-emphasis and unpleasant attachment directly to the line of the little girl's face.

can be utilized for a wilful design of shapes. It is largely a matter of spotting and space arrangement, but undertaken under the greatest difficulties. The selection of an open space with the decided lines of sidewalks as a basis of the design was a move toward a successful exposure, but the same clever grouping (or rather distribution) of pedestrians may occur only once in an afternoon. The feat consisted in the seizing of the most favorable movement, and it seems that all figure compositions in the open depend on patience and judgment. The misty atmosphere of a February afternoon helped considerably, as it eliminated all details in the background. A 13-inch Goerz lens, $f6.3$ in a 4 x 5 Graflex achieved the result. Technically the print is excellent, and as a pictorial venture, although eccentric, it has the merit of novelty and skill.



"FOGGY AFTERNOON." DONALD C. FITTS

REVERSAL OF THE IMAGE IN DEVELOPING

WHEN a film or plate that has been exposed in the camera for the purpose of making a negative proves, after development, to be a positive—that is a *picture*, instead of a negative from which a picture can be printed—a reversal of the photographic image has taken place.

While complete reversal of the image rarely occurs, partial reversal is often produced in tray development, by actinic light (light to which the film or plate is sensitive) acting on the entire surface of the emulsion *during the process of development*. If actinic light acted on the entire surface of the emulsion before development began, the result would be a fogged negative, not a reversed image.

This actinic light may enter the dark-room through apertures in the walls or around doors or windows. It may, and in most cases probably does, come from an unsafe dark-room lamp.

All light that comes from the dark-room lamp should pass through a



PRINT FROM A CORRECTLY DEVELOPED NEGATIVE

combination of ruby and orange glass, fabric or paper. If fabric or paper is employed it should be the kind sold by photographic dealers, as those that are not specially made for dark-room lamps may not be safe. The glasses supplied with the Kodak dark-room lamps are safe.

During tray development, the tray should always be kept two feet or farther from the dark-room lamp and the negatives should not be held close to the lamp for more than a few seconds at a time, as all light, regardless of its color, will, if allowed time enough, affect the emulsion of a film or plate. Excessive exposure to even ruby and orange light will produce fog, while a few moments' exposure to an unsafe light during development is apt to cause a partial reversal of the image.

Neither fog nor reversal can occur during development when negatives are developed in an Eastman tank in accordance with the instructions that accompany each tank.



PRINT FROM A NEGATIVE PARTLY REVERSED DURING DEVELOPMENT

TALKS ON COMPOSITION—FOURTH PAPER SADAKICHI HARTMANN

THE REPETITION OF SHAPES

WHEN the eye notices in a picture a repetition of shapes of much the same size, form and character, it instantly becomes familiar with the peculiarities of these shapes and thus conscious, pictorially speaking, of the same as spots. The simplest grouping of sail-boats as in the accompanying diagram will convince you of this fact. The similar form, size and color will affect the eye as spots in the general scene. (Fig. 1.)

To realize, let us take a look at "The Syndics," by Rembrandt. The first things you notice, are the seven well-lighted faces and white collars and some minor light shapes. They are seen as so many light spots on a dark ground. Only gradually we begin to study the faces, distinguish the background, the pattern of the tablecloth, the costumes and the position of the hands. When ever the similarity of figures permits of this treatment it is sure to produce a strong and favorable effect. But the method is not as simple as it looks, although it depends almost entirely on the placing of the light shapes on a dark ground, or *vice versa*, although this is not frequently met with, as there is generally less white than black in a picture, and white is more effective for this purpose than black. In strictly tonal compositions, spotting of this kind is less desirable, as it is apt to be too vague. It needs contrast to carry out the scheme to its best advantage.

Besides, there is no reason for elimination of detail. Rembrandt's painting is surely not lacking in it, but each pictorial fact has been subordinated to either the light or dark keynote. The detail of the faces, collars, hands and papers all belong to the prevailing scheme of light, and the remainder to the semi-darkness of the room and the intervening half-lights.

The placing of the spots depends on the most primitive sense for pattern design, or, in plain words, they have to be put where they look best. This

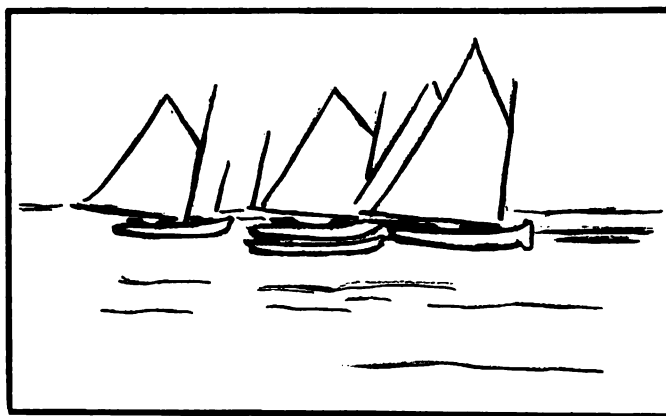


FIG. 1



"THE SYNDICS"

REMBRANDT

is a point where composition cannot be taught, as it is too much a matter of individual taste. Yet you will notice that the heads are placed in two rows of three each, that the four heads in the middle form a rhomboid shape, and that all together they make a flat ellipse. This is not an accident; you



"THE GLEANERS"

MILLET

will notice it in all good pictures of this kind. The more line and shape-feeling there is in such spotting the better it is.

When we consider repetition of shapes in real life, as we can so frequently in all sorts of field labor (to mention only one subject), it is not so much a matter of spotting but of actual similarity of shapes, as in Millet's picture. Any uniform action, as of stooping while stepping forward and reaching forth with one arm, will surely produce the desired effect, if properly placed. The figures will generally be seen in a diagonal line, overlapping each other as in this picture, or moving behind each other in gradual diminution toward the distance.

PICTURES AGAINST THE LIGHT

MOST beautiful results are sometime secured by facing the camera toward that quarter where the sun ought to be found, but there are physical impediments in the way which militate against success. The main condition is to keep the direct light from entering the lens and producing a too glorious fog.

Lovely results in the way of the so-called mist effects, or superb aerial perspective or, if you will, artistic atmosphere, are in this way had to perfection, and the result is charming in the painting-like picture.

We shall not here speak of the mechanical devices to exclude the entrance of the direct rays, as we merely wish to touch upon an unsuspected cause of the want of conformity of the photograph to the actual picture the eye is so delighted with.

In the endeavor to avoid what is called halation of image the careful photographer uses every device. Now it is this very halation which is essential to the pictorial effect, a thing looked upon as an evil. But there is "a soul of good in things ill," and here we may discover it. Usually, in fact invariably, backed or double-coated plates are used to prevent the halation, but the artist may utilize it, and throw the scene into a delicately-gradated mist, and suffuse the foliage, the houses and the distant hills with a pleasing indistinctness.

We must choose a time of day when the light itself is not intense—early or late in the day and with a small stop in the lens. And furthermore, we must not do, as too often is done, use a developer or means of development to obliterate the halation.

The most suitable developing agent is ferrous oxalate; one part of the iron to five parts of the oxalate, without any restrainer, gives the best results.

We might add that a certain amount of halation in interior views would add to their more artistic presentation. The eye sees the effect of the light through the windows, and a perfectly-outlined presentation to the artist looks unnatural; of course, care must be used here to minimize the over-action so as not to have a mere blur in the picture.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, EDITOR A. WALMSLEY CHAMBERS, PUBLISHER

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

PHOTOGRAPHY AND ADVERTISING

WHATEVER photographers may know to the contrary, with the laity a photograph invariably carries with it the implication of absolute verity, and is frequently brought in evidence as confirmation of a fact "strong as proof of Holy Writ." Compared with sketches or drawings of things, it is held in *fee simple* for realistic truth in the estimation of the general public. They feel that they have a *bona fide* representation of the actual which gainsays all arguments to the contrary, since it exhibits the defects as well as the good qualities of the original. Now, we photographers know that our art may lend itself to deception, and may be made the agent or instrument for false representation. We know how, by selection of focal length, we may convert a molehill into a mountain; exaggerate the virtues or depress or minimize the defects; in a word, make our reproduction, like Macbeth's Witches, "lie like truth." But the general world still appraises the truthfulness of the copy by the camera, and on general principles the public is justified in its verdict, because photography is more employed to give a true testimony than to play the part of a false witness.

Now, the man who employs photography as a means of advertising his commodities feels with the general public that he is displaying to a discriminating public, who is not to be deceived by sophistication or the false embellishment incident upon the pencil of the draughtsman.

Every enterprising business man has come to understand the worth of photography as a means for exploitation. But to be of value in representation by the camera it must not only carry with it evidence of truth but must also be attractive. The more original or unique your method of picturing the object the more it is enhanced, and the more it is appreciated by the advertiser and the better the price for your work.

The key to successful photographic advertising is to make it pictorial, ornamental, attractive in itself, just as any verbal advertising must needs be attractive to serve its purpose. At the beginning of the year, calendars are much in evidence, and have been found to be a good means for advertising all sorts of businesses, because if they are attractive they are preserved and conspicuously hung up for reference. Last year we noted many fine examples, the majority of which were photographic pictures, lithographs in color.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1391. *B. E. Barnes*.—"Night Scene." Appreciating the difficulties of such a subject, we cannot demand just the features we would wish; that is, a reduction of the excessive



No. 1392. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Thornton-Pickard; Bausch & Lomb lens; f8; July 3.30 P. M., sunshine; 3 seconds exposure; pryosoda developer; Azo E hard print.

contrast, and a too great forward projection of the high-light portions. The particular subject here is not one which lends itself to the exploitation of the peculiar illumination.

1392. *H. B. Sneesby*.—"Home Portrait." The pose of the figure is inartistic. It is admissible to represent the body foursquare and the head turned to an angle, but never to pose the body sidewise and make the face turn in front, or nearly so, as you have done. It destroys all true relations and is an injustice to a good figure. Besides, your portrait would have been better if the other side of the face had been selected; it would have done more justice to the features. The contrast is too great. The picture is too black and white.

1393. *J. S. Lovegrove*.—"Winter Water Fall." Composition is poor; really no attempt at composition. The mill-dam is made the least important part of the subject. Indeed, we cannot call it a waterfall, and it looks more like an artificial dam. The subject is also very much undertimed, and the result is that the textural qualities of rocks, water, trees, etc., are imperfectly exhibited.

1394. *M. S. Schammel*.—"Eucalyptus." The subject is not at all well composed. The trees deserve a better treatment to show their pictorial quality. The pathway itself detracts from the motive, which should have been employed in expressing some phase of wild nature. Besides, there is nothing attractive in the foreground to warrant so much of its presence. The tone is one monotonous stretch. No variety of light or shade.

1395. *Marguerite Ballhorpe*.—"Going to School." The suggestion of movement is



No. 1395. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Brownie; single lens; largest stop; July noon, sunny; snap; tank developed; Azo E hard medium print.



No. 1398. *Data*.—3A Folding Kodak; R. R. lens; U. S. 64; March 6 P. M., hazy light; 1 second exposure; E. K. Co. special developer; Azo hard medium print.

better expressed in the attitude of the little girl than in that of the boy. There is idea of progression indicated by the advance of one limb before the other. The boy is practically at a standstill, both feet being on the same line. The perspective of the scene is good and the general composition pleasing.

1396. *W. F. Heistermann*.—"Irma." The portrait is injured considerably by the unpleasant, blotchy landscape setting, and the obtrusive high light of the arm of the chair. There is no atmosphere around the head, which looks as if it were plastered to part of the background, the tree trunk, or whatever it is which is seen to project from the head, and seems to form a part of it. A plain background would be better.

1397. *Jessie G. White*.—"Outdoor Portrait." The general pose is rather pleasing, but the figure is placed too centrally and the lower part is lost too much in the blank shadow. A little more time to the exposure would have lessened the excessive contrast.

1398. *J. P. Tillery*.—"After the Victory." A group like yours presents considerable difficulty to arrange artistically, but you could do better than place the individuals as you have in the two formal rows. Notice how unpleasant the limbs appear directly in front. You merely present a number of individual portraits on one plate. You have not made a pictorial group. The photography is first-class.



No. 1401. *Data*.—3A Seneca; f8; June 11 A. M., good light; 1-5th second exposure; pyro developer; Cellofix print.

1399. *Thomas B. Brown*.—"Tossy and Sarah." The little models play their part well. They are quite natural and pleasing, but your grouping is poor and you have such violent contrast; mere black and white.

1400. *Edw. O. Carpenter*.—"Land-locked Salmon." We cannot say much, in a complimentary way, as to the manner in which you have treated the subject. Doubtless the salmon is a very fine specimen, but you fail to bring out its good points. We will say, however, that such a subject is by no means an easy one to handle; not only must the proper illumination be chosen, but the light ought to be softened to show the beautiful markings on the fish and an orthochromatic plate used. It is really as difficult to handle



No. 1405. *Data*.—5 x 7 Conley B. S.; Cooke lens; f4.5; June 3 P. M., bright light; 1/2 second exposure; pyro-soda developer; Disco print.

as a portrait, and so there is much excuse for the beginner in not succeeding. In the first place, the lighting is bad and the plate not suitable; and, secondly, the development has made the negative so intense that we have nothing but the extremes of light and shade, absolutely no gradations.

1401. *W. K. Yeatman*.—"Cooling Off." The composition is too extended, both to the right and left. The central portion is the more pictorial, and in our opinion has all that is of interest pictorially, and we suggest cutting off the parts indicated. The cow to the left interferes with the composition, throwing it considerably out of balance, without adding anything by its presence. By cutting it out we preserve balance, we

exclude, also, some to the right, despite that it has some pleasing features.

1402. *A. G. Shurman*.—"Violets." A pleasing bit, direct from nature, and at the same time presenting artistic quality. The character of the flowers is well expressed, and the surroundings form accessory features, pleasing in themselves, but not too pronounced to interfere with the main subject.

1403. *Wm. Krebs*.—"The Brook." The picture is too uniform in tone. There is no variety of light and shade, either in the foreground or in the foliage. Such a subject, to be made effective, requires deep shadows and soft high lights. In other words, the illumination under which you took the view was unsuitable. Five o'clock, or even later in the day, would have given rich effect.

foot. It suggests amputation. However, your work has much that is pictorial in it.

1406. *Fred. E. Crum*.—"Friends." The figures are too large for the space allowed them. They suggest crowding, and besides not sufficient of the figure of either the dog or the horse is shown. The figures should have been smaller for the space, or a larger plate used. It is unpleasant to see the lower extremities of the dog amputated and the beautiful horse decapitated.

1407. *B. C. Mott*.—"Pensive." The sentiment is well expressed, and the general softness of the picture appropriate to the theme. The lighting of the figure is artistic and its general pose most pleasing. The landscape setting is fully in accord with the motive and the composition as a whole well managed.



No. 1404. *Data*.—1A Graflex; B. & L.-Zeiss Tessar lens; $f4.5$; July 5.30 P. M., good light; 1-200th second exposure.

The light of midsummer is too intense at 3 P. M. for this kind of a picture.

1404. *G. H. Brown*.—"The Rival Tows." The general effect of the shore is pleasing and its perspective well arranged, but the grouping of the craft is poorly managed. It does not exhibit the peculiarities of the boats, nor does the association of the vessels add to the general effect. They are too much jumbled up. The long float could easily have been spared, much to the pictorial advantage of the subject. The horizon line is properly taken and the sky prospect is good.

1405. *C. R. MacCarrick*.—"Indoor Portrait." The soft effect is quite pleasing and the general pose of the figure easy and natural. The expression is fine. The background is perhaps a trifle too dark, but we are not sure we are right in this, because the relief is certainly effective. We could wish, however, that you had included all of the

Very commendable piece of pictorial work, but would be improved if the tree at the extreme left was removed.

1408. *J. H. Weimer*.—"Listening to the Story." Quite a good child study and commendable photographic work. The motive is hardly presented. It does not suggest that a story is being told. The little one in the center is the only one who is unconscious of the fact that the picture is being taken, but the photograph exhibits good portraiture out-of-doors and the lighting of the faces is excellent.

1409. *W. C. Dance*.—"Outdoor Portrait." The general character of all the work you submit is excellent, both photographically and in artistic treatment. You exhibit considerable taste both in illumination and general pose of the figure. The one we select, of the young girl wearing a hat, is particularly good, especially in the management of the

hand. The treatment of flesh and drapery would do credit to a professional.

1410. *S. W. Singer*.—"Grace Church." A good piece of photographic architecture, and exhibiting the character and beauty of the structure. The point of view is also well taken to give good, pleasing perspective, and the lighting is such as to give proper relief to the various projections and recesses of the building. The diagonal projection adds much to the effect.

1411. *William H. Hunter*.—"Instructing Grandpa." The composition is not well managed. It is too evenly balanced. The baby is placed too centrally, and equidistant from the other two figures. The mother is



No. 1409. *Data*.—3A Folding Pocket Kodak; Cooke lens; $f6.3$; May 3.30 P. M., fair light; 1-5th second exposure; pyro (tank) developer; Artura non-curling print.

the best feature in the picture. She is natural and interested in the subject. The grandpa rather detracts, and the straight line formed by the rake makes unpleasant angles with the fence rails.

1412. *A. S. Workman*.—"Morning Light on Willows." A rather good composition. The long shadows projected in front in the foreground add much to the effect, and the



No. 1407. *Data*.—5 x 7 No. 2 Eastman View; Struss pictorial lens; S. S. stop; July 11 A. M., bright light; quick cap exposure; Rodinol developer; Cyko print; 6 times Ray filter.

texture of the snow is well indicated. The winding line of the snowdrift proceeding in a gradual curve up into the picture, until it is lost in the distance, gives a nice contrast to the vertical lines of the trees and adds interest to the scene.

1413. *Mrs. L. P. VanWoert*.—"The Wigwams." The composition is poorly managed and the different parts are not properly related. The subject is entirely too monotonous, and the various lines of the composition serve only to make a confused mass. The photographic quality is poor; very much undertimed, giving violent contrast and general hardness.

1414. *F. B. Hill*.—"Bride and Groom." The grouping is by no means agreeable; both the figures seem too much constrained. The arrangement is stilted and the pose awkward and unnatural. It is very unfortunate for the gentleman that you were compelled, by limitation of your print, to amputate his feet. This may account for his not very agreeable expression.

1415. *James Slater*.—"The Walk." The suggestion of movement is quite well expressed, the position of the garments adding



No. 1412. *Data*.—January 9 A. M., $f8$; 1-10th second exposure; 3 times B. & J. filter; pyro developer; Azo E print.



No. 1414. Data.—4 x 5 Cycle Poco; R. R. lens; U. S. 16; December 1.30 P. M., dull light; 2 seconds exposure; pyro-soda developer; Argentus post card print.

to the effect. It would have also added to the idea had one figure been a little in advance, indicating progress. You did wrong, however, to print in the oval, inasmuch as this form cuts off the widening out of the foreground and limits the onward progress of the figures.

*

A USEFUL ELECTRIC DARK-ROOM LIGHT

An electric flash lamp provided with a ruby bulb is very convenient to the photographer, as it can be arranged to shine through the bottom of a plain glass dish. For this purpose a hole should be cut in the bench top a little smaller than the bottom of the dish, the latter being kept in place by a thin wood frame tacked round the hole. To ascertain how development is proceeding it is only necessary to flash the light momentarily beneath the hole. An ordinary clear glass bulb will answer almost as well if the whole lamp is wrapped in translucent red tissue.

DEVELOPING CHLORIDE PAPERS

The development of the faint image produced by brief exposures upon chloride of silver emulsion papers (P. O. P.) was worked out by Drs. Eder and Pizzighelli as far back as 1881. Their experiments were specially directed to the chemical development by alkaline hydroquinone solutions and were not particularly applicable to the general brands of printing-out papers, but more to papers making enlarged pictures.

Liesegang further developed the method and furnished formulæ for a variety of chloride emulsions, but the method published by Valenta, in 1891, of developing faint impressions on different collodio and gelatino chloride papers by means of hydroquinone, pyro and other developing agents, has been found the most practical. His results fulfill to the highest degree all the requirements of clearness and pleasing tone. The method consists in the use of acid developing solutions.

The formulæ recommended by Valenta are as follows:

HYDROQUINONE DEVELOPER

A. Hydroquinone.....	150 gr.
Alcohol.....	4 oz.
B. Sodium sulphite (gran.)...	2 oz.
Water.....	20 oz.
Citric acid.....	80 gr.

For use take equal parts of A and B and dilute with twenty parts of water.

PYRO DEVELOPER

Distilled water.....	40 oz.
Sodium sulphite (gran.).....	2 ½ oz.
Pyro.....	150 gr.
Citric acid.....	180 gr.

This solution must be used immediately, as it does not keep. The hydroquinone works clearly and slowly and gives reddish-brown tones; the pyro, rich violet-black tones.

Instead of citric acid, tartaric acid may be used of a strength of 30 per cent greater than the quantity of citric acid.

The faintly printed pictures are placed in the developer and kept in movement constantly. The image assumes a yellow-brown color. Develop rather vigorously. Wash well in running water and tone to the proper shade in any good combined toning and fixing bath. It here assumes a red-violet, finally a black tone. Then wash as usual.

A good combined toning and fixing bath is as follows:

Distilled water.....	20 ozs.
Hypo.....	4 ozs.
Ammonium sulpho-cyanide....	350 grs.
Alum.....	1 oz.
Lead acetate (1-10).....	1 oz.

This solution is to be heated on a water bath to about 100 degrees. It is then filtered and diluted with half its bulk of water. Take, say, four ounces of it. Dilute with two ounces of water and add to it one-half ounce of a one per cent solution of chloride of gold.

COLOR AND PRINTING QUALITY

The production of a brilliant, clear negative is no assurance of a good print. It is not an uncommon occurrence to meet with photographers who appreciate the fact that, notwithstanding the possession of what seems to be a technically perfect negative, the resulting print is in no way up to the ideal expected therefrom. The work lacks those nice gradations from high light to deep shadow, essential to pictorial effect. The conception of the picture, the posing and lighting may be satisfactory, but the print itself does not interpret properly. It looks flat, has no depth, no brilliancy, just where it ought to have such features. The critic is very apt to suggest as the cause a weak negative, over-timed or perhaps one not carefully developed, but he is at once confronted by the exhibition of a negative of most excellent chemical quality. Then the developer is assailed if the critic happens to be a good technician, only to be met with the response, "What difference does that make; look at the results; have you anything against the quality of that work?" Aye! but appearances are deceiving—and many a charming negative, the pride of the maker, is just the poorest agent for making a good print. This looks unreasonable at first sight. Final results are wanted.

Now, do not think this paper is indited simply for the purpose of booming up pyro as a developing agent, or to blacklist, like the fox in the fable, the grapes he could not get, the fine bunches of metol, eikonogen, adinol, etc., etc., but simply to say once more what we have always maintained, that notwithstanding the peculiar advantages possessed by the so-called patent developers, the old pyro will make a better printing negative than any of the new ones. And why? you ask. Let us suppose you have exposed two plates of the same brand of emulsion upon the same subject, under identical conditions of time, lighting, etc., and that you develop the one, say, with the much-lauded metol and the other with the somewhat side-tracked pyrogalllic acid. You present us with two negatives of apparently the same intensity. Your print from one result satisfies you, the other does not. The metol-evolved negative presents a print which belies all the exhibited virtues of the plate. Held up to the light you see a nice gradation of light and shade and particularly rich and brilliant high lights and soft deep shadows. The pyro-developed negative, on the other hand, instead of showing that delightful grey tone, appears of a rather nasty-looking, greenish black tone, but the print therefrom is an unexpected satisfaction.

Now, to what is all this due? Is it a premium on bad negative work? No, it is simply due to the fact that pyro confers a color upon your negative film at the same time that it gives an image. This faint trace of color, which persists if you do not persist in deluging your developing solution with sodium sulphite, holds back the printing in the high

lights until the shadows are printed properly; while the absence of color in the metol negative lets an unmitigated flood of strong light penetrate and over-print before the denser parts are sufficiently affected—and you know the result.

Patent developers have their undoubted advantages and for certain kinds of work are *par excellence*; and they offer less difficulty in manipulation, to say nothing of their cleanliness in working and the latitude they allow in exposure. But for the careful, judicious and experienced pictorialist nothing has as yet superseded old trustworthy pyro, and just at present its intrinsic virtues should receive consideration.

ERRORS IN THE FOCUSING SCALE

Regarding defective negatives obtained from misuse of the focusing scale these might often be prevented if hand-camera makers would scale their cameras in yards instead of feet. Most hand cameras have distances such as, 8, 10, 15, 25 and 50 feet engraved on the scales. Apart from the 15 feet none of these is a definite number of yards. With such distances as 2, 3, 4, 6, 8, 12 and infinity on the scale, we may reckon the same number of paces and after a few trials these distances can be very correctly estimated. My own method is as follows: Supposing I want to take some figures coming down a street, I decide on a spot in the road or pavement which I intend they shall reach before the camera comes into action. I focus my camera to the estimated distance on the scale—and if there is any doubt as to the distance it is easy to pace from it to the position selected with sufficient accuracy for good work, and continue holding the camera at my side or behind my back till the group get fairly near. Then rapidly bringing the camera to level, I sight my object in an accurate view finder, and if the composition is correct release the shutter. It is all done so rapidly that the unconscious victims don't realize that a photograph has been taken. When they have passed by I change the plate. You will notice that I don't change the plate till my subjects have passed on their way. It is advisable, in the interests of photographers who may come afterward, that we don't dance in triumph on having bagged our prey. People are inquisitive enough as it is, without having their imaginations excited by the thought that they may appear on post cards in the local stationer's window, and I consider it essential that my subjects may be quite unconscious of their doom. I have frequently photographed people at one yard distance quite unbeknown to them. Much may be done when lighting a pipe and appearing abstracted by the beauty of the scene. In such matters the male sex have great advantages, and consequently the very fine work being done by many ladies with the hand camera is worthy of the higher praise.—*Photographic Journal*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

It has always been a wonder to me why the railroad companies have been so slow in adopting the motion picture. They assert they have done everything in their power to have their star trains represent the last word in comfort, but the poor motion picture has been left out in the cold. Has it been because they thought the highbrows would object? I don't think it can be that, for the photoplay now knows no class, and many of the high-grade productions turned out today are fit for a king to see. What, then, is the reason? I attribute it to the fact that taking care of motion-picture exhibitions is a totally different proposition from that of giving cabaret entertainments.

There is, primarily, the material of which films are made—celluloid. The very name is synonymous with danger. Some months ago a man was carrying several reels on a passenger train out from Chicago when, through his own carelessness, they caught fire, doing damage to the car and causing two deaths.

Films, if shown under safety-first conditions with the operator working in a fireproof booth, are no more dangerous than gas or electricity. No doubt, however, it has been exceedingly hard to break down the prejudice which exists when the subject of motion pictures is broached in this connection.

It may interest the railroad authorities to know that one of the producing organizations print all their films on inflammable stock, thereby enjoying fewer restrictions with local authorities.

I understand that the Pennsylvania Railroad Company has under consideration the showing of motion pictures on their trans-continental expresses. It was proven, at a demonstration held in one of their Pullman cars, that exhibitions could be given without any material alteration to the cars at present in service, whether operated by electricity or otherwise. The Canadian Pacific Railroad Company intends doing the same thing, but plans have not thus far matured.

Recently a company was organized at Springfield, Illinois, to acquire railroad cars for the purpose of giving photoplay entertainments en route, making stop-overs at rural communities which have no regular motion-picture theater. The car would be side tracked, and attendance of the people

solicited. Their first car is already in operation in the Middle West.

The long journeys we sometimes have to make from the Atlantic to the Pacific, or *vice versa*, are often very tiresome. To pass the time pleasantly of an evening we need something to vary the monotony of dancing or reading. Maybe we feel like being entertained along the lines of least resistance—someone else doing it for us. The missing link is the motion picture. We would not soon tire of a varied program comprising really funny comedies, strong dramas and interesting educational.

Who has not spent many a weary hour in a station waiting-room? Would you not willingly part with your last penny if you could be assured that the time would slip by unnoticed? Let the motion-picture fairy wave her magic wand—that is all.

There would have been free motion-picture shows in the waiting-rooms of the big city stations covered by the Western State Railway System of France had not the European war intervened. It is a pity that only important stations were contemplated to be covered, for it is at the rural stations where the waits are much longer and where there is hardly anything to do to pass the time.

Fernard David, the French Minister of Public Works, proposed that the films depict resorts and charming scenery to be seen on the route of the railroad, with one or more one-reel comedies and dramas to mix well. The Minister displayed common sense in not suggesting feature productions. I, for one, would not like to be engrossed at the point where the hero was about to save the heroine from disgrace when the train I was waiting for steamed in. Would you?

Once motion pictures are introduced on our long-distance trains and station waiting-rooms we shall find traveling a real—shall I say “reel”—pleasure?

The more theaters in which a film can be shown lessens the cost of production. The average storekeeper is necessarily limited to one or more of the local photoplay shows. He wants a film the length of which will occupy the screen for the same duration as the stock slide, but no longer. From forty to sixty feet is about right, and to have a subject of this length produced to conform with its individual requirements would cost

about fifty cents per foot. To a dealer who has been accustomed to paying from thirty-five cents to one dollar for the stock slide, the outlay is enough to discourage him, but the stock film has been made a practical possibility, bringing the advertising film within reach of every retailer, large or small.

The motion-picture producing concerns, which are making a specialty of this effective form of advertising, have not confined themselves to one particular kind of production; they have taken their cue from the regular photoplay manufacturers, aiming at variety and novelty, and adopting their methods of production on a miniature scale. The average stock film costs from \$4 to \$5.

The most popular seems to be the animated cartoon. A clever subject gotten out recently presented an ocean liner, which is chased by a submarine and finally torpedoed. The explosion sends letters scattering in all directions, after which they arrange themselves into an advertisement. Then the steamer disappears below the surface.

There is also the regular photoplay with human performers acting as in real life. One of these, which I viewed recently, showed a comedian, who throws such articles as a hammer, saw and monkey-wrench in different places, with the result that a convincing announcement is formed for the hardware dealer.

Civilization now places Thomas H. Ince in the same class with Griffith. The story, written by C. Gardner Sullivan, has been inspired by the European war, but to suggest the nation with which the picture deals is impossible, so skillfully is the theme handled. In one respect it is unique for a war film, as the only glimpse you get of the enemy is on the battlefield; of personages little is shown, and yet the absence of this so-considered essential element is not noticeable; probably this is due more than anything to Herschel Mayall, who, as the King, is a commanding figure, and also Howard Hickman as Count Ferdinand, another masterly piece of acting.

Some unusual photographic effects are introduced. The battle scenes are in colors—blue to suggest the sky and red the bloody conflict raging below. The allegorical portion is handled with considerable delicacy.

I think Mr. Ince erred in introducing stores in the vicinity of the King's palace. Anyone who has traveled extensively will tell you that European capitals are not similarly situated. This is the only defect in an otherwise praiseworthy production.

The Universal Company is to be congratulated on the thorough manner in which it safeguards the interests of its employees. When a thrilling drama is put on, a surgeon is assigned to go with the film party. Placed in his automobile is an emergency kit; if members of the company meet with exceptionally bad luck, the medical man has sufficient facilities at his command to erect a temporary field hospital.

At their producing plant, at Universal City, there is a regular hospital maintained by the company. When you consider that there is an active population of more than one thousand it is not surprising that many patients are treated. The employee who becomes a patient is charged nothing for the services performed, and should the injuries necessitate lengthy treatment he is paid his salary just the same.

The hospital is not a makeshift building, as you might expect, but bares favorable comparison with any modern hospital. It is forty feet wide, seventy-five feet long; eight beds occupying each ward. Ideal sanitary conditions are assured by tiles being used for the floor, which is rounded at the corners. The tables are glass top and of porcelain enamel. Every provision is made for the comfort of patients.

Insect life studies present more difficulties to the motion-picture photographer than any other class of film. All a magazine writer has to do is to interview a bee farmer and obtain a few still photographs, perhaps already at his command. The cinematographer, however, in order to secure a convincing picture, must cover his subject in actual reality. A start is generally made by reading a book on the subject and preparing a scenario therefrom. This will probably take several months to produce, yet, at the most, will only yield sufficient negatives to occupy the screen for a few minutes.

An amateur worker of my acquaintance, who makes a specialty of educational work, told me that the hardest task he has ever undertaken was filming a swarm of bees in action. He started by establishing a real aviary in the studio yard. Some incidents he obtained comparatively easy, but whenever he wanted to "catch" the bees in action they immediately swarmed around him as he began operations, and he was compelled to beat a hasty retreat in the interest of safety first. He had the patience of a saint and certainly deserved to make good.

The one and only cinematographer who has achieved a reputation for bee films is J. C. Bee Mason. He has produced four pictures of the honey bee, which have netted him \$10,000. In the true way of a pioneer, Mr. Mason had many setbacks before he succeeded, but is now quite hardened to stings.

Monsieur Lucien Bull once desired to show the movements of a bee's wings, and was compelled to resort to his electric spark system. Had he not done so, the results would have proven as indistinct as an electric fan in motion. To accomplish his object he set free a bee from the contrivance attached to his camera, which attained a speed of two hundred pictures per second. The bee, however, was such a hustler in regaining its balance that only twenty pictures were necessary to record the stunt.

I have before me, as I write, the circular-

letter of a new film-producing concern. This is their principal argument: "Why continue to write scenarios and have them returned when you know they are worthy of production or sell them for a few dollars when the market is paying as high as \$1.50 a foot or \$1500 a reel for a negative print or a positive film?"

As this is the first case of a photoplay producer soliciting business in this way, we might see how the method works in the book-publishing business. The leading publishers are always willing to publish a good book at their own risk, but the other kind of publishers, not content with having the cost of production covered, charge considerably in excess. And after the book is published they do not boost it in the manner a reputable publisher would.

Several photoplay authors have, at different times, branched out into the producing field on their own account, but it is perhaps significant that their ventures have been but short lived.

To produce a successful photoplay requires unlimited funds, plenty of resources, a galaxy of stars, well-equipped studio, an efficient staff, and last, but not least, a reliable distributing organization. Of the above, the latter is the hardest problem, for the majority of the present releasing concerns have their schedules fully provided for.

Rather than incur these risks, you will naturally prefer to have a leading producer put on your scenario. If the same has gone the rounds, it is hopeless. With them it is not a question of money—they are governed more by the requirements of their releasing affiliation.

A new book, "Advertising by Motion Pictures," will appear early in September. The subject is one in which there is scarcely any information available, but the endeavor has been made to cover every phase of the same in an understandable manner.

METHOD OF DETERMINING "F" VALUE

A simple method of determining the relative aperture (f value) of a given diaphragm with some approach to accuracy, is to take a distant luminous point, for instance, a gas jet say at thirty feet away, and to focus as sharply as possible and mark the position upon the ground-glass. The camera is then racked out until the image of the flame forms a slightly blurred circle of about an inch or two in diameter. At this point the position of the ground-glass is again marked upon the bed of the camera. The desired f value is found by dividing the diameter of the circle of light by the distance separating the two marks.

For example, it may be supposed that the diameter of the circle of diffusion is one inch, after racking out the camera five inches from the point of sharp focus. Dividing the extension 5 by the diameter 1 gives a value of $f5$. This method is quite accurate enough for verification of the f values marked on the lens.

REPRESENTATION OF MOVEMENT

The artist, whether he uses the brush or the camera, when undertaking to present in his picture suggestion of movement, must ignore the extreme narrow limits of the single attitude. A snap shot, by reason of its scrupulous adherence to the actuality of the momentary attitude, really takes away all similitude of motion, life, action, because it represents the object as if it were petrified in a transient state, and conveys the impression of pain or constraint, since the animal could not possibly maintain such a position for more than a moment without suffering.

A continuity of movement must be suggested to give pleasure to the beholder. A picture can no more place itself in antagonism to the physiological condition of vision than music to the sense of hearing, and photographers, who endeavor to depict movement pictorially, should imitate the great painters and give suggestion of continuation of action, and not chronicle some one phase only of movement. There should be associated objects in the view which serve to carry the mind from phase to phase of movement, so as not to weary the eye with the monotony of one attitude. Surely it is possible for the photographer, on art intent, to leave sufficient space about his figures to indicate their possibility of movement through that space, instead of scrupulously filling up all the space to conform to some set law about balance of parts of the picture. One might thus give an intensity and energy of action which isolation could never effect.

FAILURES IN SQUEEGEEING

When prints are squeegeed to glass, or some other suitable polished surface, they ought, when subsequently stripped, to present a perfect cast of that surface, and to have just the same unbroken glaze which it possesses. From examples which one sees from time to time, it is clear that this is not invariably the case.

The fault which is most frequently seen is that of little specks, which glisten when the print is viewed at such an angle that the rest of it does not reflect any bright light directly. These specks, as a little examination with a magnifying glass makes sufficiently evident, are due to air bells, which, interposing between the print and the squeegeeing surface, have prevented proper contact.

To make sure of excluding them, there should be plenty of water when the print is laid down; and the laying down should be done in a particular manner, familiar enough to the old-time worker who has sensitized his own paper on a silver bath, but new perhaps to the later recruits to photography.

The print should be held face outward, so that it hangs in a loop, and the bottom of the loop is what should first touch the surface. Then, on lowering the rest, contact takes place

from the center outward in both directions; and if there were any air bells—there should not be—they will be gradually pushed outward, instead of being enclosed.

The actual squeegeeing should be looked upon as an operation necessary to get rid of the surplus water only, and not as requisite to get rid of air. In fact, it is very difficult, if not impossible, to expel any air bells with the squeegee, when they are known to be there. They can be seen, if the squeegeeing is being done on glass, but in the case of ferrotype plates or of pulp boards the presence of air bells may not be suspected until the print is stripped. If they are known to be present when the squeegeeing is being done, it will be found that the best plan is to peel the print off the surface, rewet it, and put it down afresh.

Another cause of failure is involved in forcible stripping. The prints, if properly hardened before being squeegeed, will come off quite easily when they are perfectly dry. They may even drop off untouched. When they have not been hardened they may adhere even when bone dry, and any attempt to pull them off, if it does not actually tear the print, makes a series of cracks in the surface at right angles to the direction of the pull, and quite spoils it. There is no remedy for such cracks, their cause must be avoided.—*Photography and Focus.*

BRIGHT RED TONES ON BROMIDE PAPER

The production of bright red tones as a corollary of the sulphide toning of bromide or gaslight prints is by no means a new thing, but it is effectively summarized in Practicus' Series of Valuable Articles in the *British Journal of Photography*, May 14th.

"A further development of the sulphide toning process, which would seem to be in considerable use at the present time, is the production of a bright red tone by the use of a gold toning bath upon the sepia prints after washing from the sulphide bath. The process gives an exceedingly bright, clear tone, particularly suitable for prints of sketch character, surrounded by a considerable margin of white. I must say I am not in love with the effects when obtained on solid prints, particularly of dark background subjects. An ordinary sulphocyanide gold toning bath produces this tone very readily, say gold chloride 2 grains, ammonium sulphocyanide 20 grains, water 20 ounces. The print tones readily in this bath, and reaches the bright red tone in from five to ten minutes. It should then be washed for a few minutes and passed through a weak hypo bath of about 3 ounces hypo in 20 ounces water. While upon this subject, I would mention a formula for the gold bath which I have not used, but which is recommended by Mr. Blake Smith as yielding by far the most brilliant tones by this method of working. Three stock solutions are made: A: Gold chloride, 2 grains per ounce; B: Thiocarbamide, 100 grains; water,

15 ounces; and C: Sulphuric acid, concentrated, ½ ounce; water, 20 ounces. The working bath is made by mixing ½ ounce each of A, B, and C, and making up the bulk to 5 ounces of water. Although these gold-toned sepia prints are exceedingly effective, I think it should be mentioned that they are probably not fully equal in permanence to the plain sulphide-toned prints. Ordinary sulphide toning, if properly carried out, yields a sepia print which is fully permanent, so far as the photographic image is concerned. No gelatine print can be said to have the permanence in severe circumstances of one innocent of gelatine, but for practical purposes, and in view of the ordinary conditions under which photographs are kept or shown, both theory and practice may be said to agree in confirming the high permanency of prints toned by the sulphide process."

EFFECT BY TRIMMING

No matter how excellent the print may be in technique, its good features may be marred, if not entirely neutralized, by injudicious trimming and unsuitable mounting. These two considerations are, therefore, worthy of attention and personal thought and care. Whatever is unessential to the expression of the motive or intention of the subject is not only unnecessary but often injurious by the weakening of the impression it causes.

To appreciate what is essential, one must understand something of the demands of artistic composition, of the value of the balancing of masses of light and shade, and the unity and contrast of the lines. In considering the degree of trimming, notice should always be taken of the main features of the composition and the curtailing should be such as to give this particular feature its due value. The knife should therefore be used with judgment and be guided by taste. This is somewhat of a platitude, to be sure, and simply means trim properly. One thing affording some guidance is this: it is better to study how much of the subject may be excluded than how great an area may be included. Concentration is always in the direction of success rather than in diffusion. The trimming is of material aid is spacing, and this is obvious in the examination of portrait work. It makes a difference in the effect produced by the simple operation of bringing the head at the proper height and position in the rectangle. A suggestion of height and dignity is secured by elevation towards the upper margin, but it is inadvisable to trim the print so as to bring the head too much to the top.

The same remark applies to street scenes and landscapes, or pictures of buildings, or scenes where the mountains are upon the horizon. Such subjects generally look more impressive by reducing the amount of sky space. The horizon should never be directly at the center. You must never cut away the bottom of any principal object in the picture, for by so doing a feeling of weakness is introduced.

LETTERS TO THE EDITOR

Dear Sir:—I have been greatly benefited through articles appearing in your publication, and am taking the liberty of writing you for advice.

I am in the market for a $3\frac{1}{4} \times 4\frac{1}{4}$ f4.5 lens, of five inches focal length, and have been offered one, by a private individual, that has been slightly used, at a few dollars less than the price of a new one.

I have examined the lens closely, and it appears to be practically new. The mounting appears to be in perfect condition, and apparently the polish of the glass has not been impaired. The drawback to me, however, is that in the front element of the lens there appears a small bubble, which I would judge to be about one thirty-second of an inch in diameter. The owner has assured me that this bubble does not affect the defining quality of the lens, but a number of acquaintances have told me that bubbles are to be avoided when purchasing a high-grade lens; and it also seems to me that a bubble of this size would necessarily affect the definition by bending or distorting the rays of light passing through the section of the lens where the bubble is located.

As the purchase of a lens of this kind is an item of considerable expense to me, I do not want to make the mistake of buying an imperfect lens and saving a few dollars, when I could no doubt buy a new lens without any bubble and absolutely perfect, at a cost of only a few dollars more. Therefore, I would appreciate your advice in this matter.

J. G. R.

[Your inquiry concerning the lens you have an intention of buying, as to the presence of the bubble in the glass is one frequently sent to us.

While it might be more desirable to possess a lens perfectly free from bubbles, the presence of one is in no way detrimental to the working power of the lens, provided it does not exist towards the center of the lens. Indeed, it is somewhat rare to find any of the high-priced modern lenses which are perfectly free from minute bubbles.

The character of the glass is such that it is next to impossible to avoid small bubbles in its manufacture. The lens you contemplate purchasing is one of high repute, and

the makers would not let a defective one get on the market. They are scrupulously tested. Striae or scratches would certainly interfere, and such a piece of glass would be rejected; but a small bubble, if not in the axis of the lens would only act in cutting out a little light, and this would be so infinitely small as not to be appreciable. It can in no way, optically, affect the definition. Indeed, we would prefer a first-class lens with such a bubble as you describe to one with less reputation free from such mishap. So we think you are safe in buying this lens.

You might examine a hundred lenses before you found one perfectly free.]

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Dear Sir:—The thoughts that suggest this letter are, briefly, that ninety-nine per cent of those who essay to make photographs, desire intensely to make them about the farthest possible departure from the sort that win prizes in most of the photographic magazines. And this because ninety-nine per cent of those who buy photos want them distinctively different from these same prize winners.

Nor is this all. The same percentage of your friends, to whom you are pleased to show your work, will compliment you only when they come to one in a whole basketful that is free from that fanciful thing defined as diffusion, softness, atmosphere, etc., etc., plus.

Seriously, is there any reason for this pretended admiration of the fuzzy-wuzzy, except a fad? If only this so-called artistic work could be done by photographers throughout our land, ninety-nine per cent of those who now find photography profitable would be out on the streets looking for a job. If there was any place in the artistic economy of the great mass of our people for these unlikenesses (called diffused), the lens makers would be catering to this demand. But are they? They may get out something to suit this one per cent of self-styled artistic people, but all of the catalogues I have seen of all our lens makers, that show half-tones of photos made with *their* lenses, show them as the best examples of just the kind favored by the ninety-nine.

Yet in photographic journals, as far as I know, all of them cater to the one per cent. All the prizes offered, ostensibly to cultivate

improvement in technical work, are handed out to producers of the fuzzy-wuzzy—to photographic work that would not sell anywhere in this country. In *THE CAMERA* for June, the first prize picture, entitled "Dorothy," is said by whoever awarded the prize to be a very effective piece of portraiture. The prize giver talks of atmosphere about the head, but after a long look at Dorothy, I confess I can't tell, for sure, whether it is atmosphere or only scrambled hair. And the said atmosphere is so foggy, or smoky, or dusty, that I find it equally impossible to tell which is background and which either atmosphere or scrambled hair.

Yet Dorothy is but a mild example of the beauties of the one per cent. On page 311 of the same journal, "The Runaway" is even a more brilliant example of the beauties of fuzz.

In this prize winner, even the eyes, which we laymen think never ought to be out of focus, not even a little bit, are, in the "Runaway," not eyes at all, but just holes in the head. The ear shown instead of looking like an ear looks like a hunk of wool, that begins where the ear ought to be and extends up nearly to the top of the head.

Turn to page 322 and notice a photo by a Mr. Nelson, entitled "A Poor Little Belgian." This is not a prize winner, it lacks indistinctness, lacks fuzz, but it has that quality that most of us want to get in our work. It is plainly a good *likeness* of some little girl. It is the kind that the public are willing to give their shekles for. It is the kind that keeps the business of photography in existence.

If all the prints that have been or will be made in the fashion of "Little Runaway," were to drop suddenly out of existence, let us remember that less than 1 per cent of the people would miss them. But if all the work that approximates the quality and is like the print by Mr. Nelson were lost to us, the loss would be felt almost universally. Look at the two prints again: one is a dough face, meaningless; the other is life-like, the eyes speak and the mouth is shown with all its sweetness.

Why miss these qualities of *likeness*, these faithful delineations that give personality and individuality to a photo, and in their place have so-called atmosphere?

We look at the picture of "A Poor Little Belgian," and feel that if we met her on the street we would at once recognize her. But that "Runaway," it might be an attempt to picture any one of ten thousand children and no changes need be made. It has no individuality, it is lost in atmosphere or whatever the faddist wishes to call blur.

Now, Mr. Chambers, for goodness' sake, teach us how to make something like unto "A Poor Little Belgian," and deliver us from "Little Runaways."

N. R. PIPER.

DEVELOPING PAGET POSITIVES

In making positives for the Paget process of color photography the chief difficulty lies in knowing when to stop development, asserts a writer in the Color Supplement of the *British Journal of Photography*, March 5th.

"If you are used to making ordinary monochrome lantern slides, you will probably stop development much too soon; the positive for color work needs a much greater depth of density. The best way to decide when development has proceeded far enough is by removing the plate from the developing dish, and looking at the back of the film through the glass side of the plate. When the detail in the shadows can just be clearly seen, the plate should be immediately immersed in an acid fixing-bath.

"Should the plates have been developed with the hydroquinone developer, and a non-acid fixing-bath used, it will be necessary to rinse the developer thoroughly off the plates before placing them in the fixing solution, otherwise they will become stained a deep yellow, which it will be impossible to remove by after-treatment."

CAMERAS AND SHUTTERS

In most instantaneous shutters, especially the older kind, the indicated speed does not always agree with the actual speed.

In practice this discrepancy, however, does not amount to much importance. One learns the capability of his camera under given conditions, and when this has been once determined it is comparatively immaterial whether the shutter is marked 1-50 or 1-25.

If the shutter can be regulated, a speed can easily be found which gives the correct exposure under normal conditions, so that fairly good results may be counted upon. It is different, however, if one is restricted to an instantaneous exposure, as is generally the case with the simpler constructed class of shutters, and it is found that the speed is too fast for the lens, so that in certain circumstances a usable instantaneous shutter cannot be made without affecting its efficiency. At any rate, it ought to be the business of the camera makers not only to build the apparatus, but also to see that even the cheap grades of cameras are tested and the capability of the apparatus made to conform. Of course, it is not very easy for the manufacturers to meet the deficiency, since frequently the shutter is made elsewhere, and then the shutter maker is in ignorance of the kind of lens used with the shutter.

It would be better, therefore, in the case of cheap grade cameras to use a speed not greater than 1-25.

This speed is high enough for any ordinary instantaneous exposures. The ordinary amateur not infrequently sets the shutter at 1-100 when 1-5 would be sufficient. It would grieve him to learn that he had only 1-25 at the most.

KNOW YOUR FIXING BATH

One can't become too intimately acquainted with the peculiarities of the ordinary acid fixing bath, especially during the hot summer months. There is no better, cleaner-working fixing bath for developing-out papers, and there is not one photographic solution that is more abused. As a consequence a large portion of the ills to which a photograph is heir may be traced to the fixing bath.

The acid fixing bath keeps the print hard and firm, stops development immediately, prevents developer stains and fixes the print if the bath is properly made and is in good condition.

One of the principal causes of trouble is the worn-out bath, which remains clear even after it has been used for as many prints as the hypo in the solution can be depended upon to fix thoroughly. Sixty-four ounces of the regular fixing bath should never be used for more than the equivalent of two gross of cabinet prints, which would be approximately six dozen 8 x 10 prints. This applies to all developing-out papers.

Nothing is more uncertain than an improperly fixed print. It attacks your reputation in an underhanded way—stabs it in the back, as it were—and you learn of the injury too late to use first aid measures. The print may look all right when it leaves your hands, but after the customer has had it for some time it begins to look sick.

The high-lights yellow first, and if it has had very little fixing the entire print may discolor. Keep an account of the number of prints your bath has fixed, and make a fresh solution as soon as it nears the danger point, which should be while bath is perfectly clear.

There are many other causes of trouble, the first of which may be in compounding the bath. The most approved method is to make a stock solution of hardener and make up a fresh fixing bath every day or for every batch of prints.

STOCK SOLUTION OF HARDENER

Water	80 ozs.
E. K. Co. sulphite of soda	16 ozs.
No. 8 acetic acid (28 per cent pure)	48 ozs.
Powdered alum	16 ozs.

Dissolve the chemicals in the order named.

We do not say "Dissolve the chemicals in the order named" from force of habit but with very good reason. If the alum is added to the sulphite *before* adding the acid a precipitate of aluminium sulphite is formed, which it is very difficult to again get into solution. Be sure the sulphite is thoroughly dissolved, *then* add the 28 per cent acid and *then* the alum.

Some photographers prefer to dissolve the sulphite in half the water and the alum in the other half, but in compounding, the acid must always be added to the sulphite *before* the alum.

To make the fixing bath, dissolve 16 ounces of hypo in 64 ounces of water, and when sure the hypo is thoroughly dissolved add 8

ounces of the above hardener. If the hypo is not thoroughly dissolved, the addition of the hardener is liable to make the bath milky. The bath should be clear, and if not, it is an indication that sulphur has been released, and with sulphur released the solution becomes a toning bath as well as a fixing bath.

The addition of any acid (with the exception of sulphurous) to plain hypo will release sulphur. Alum will do the same, but not in the presence of acetic acid and sulphite of soda. The alum is the hardening agent, the acetic acid is the clearing agent and arrestor of development, the sulphite of soda in association with acetic acid is the preservative, so it is readily seen that the one-solution acid fixing bath answers a threefold purpose.

Prints could be developed, rinsed in a short stop and clearing bath of acetic acid, fixed in plain hypo and hardened in an alum bath, but the acid fixing shortens the operation and does the same thing better.

The chemical action of sulphite of soda and acetic acid in preventing the formation of sulphur is due to the fact that any sulphur which is formed combines with the sulphite to form hypo. In fact, hypo is prepared commercially in this way by boiling together sulphite of soda and sulphur. If sulphur has already been precipitated in the fixing bath, further addition of sulphite of soda will not dissolve it (or re-form it into hypo) as a cold solution of sulphite of soda is only capable of dissolving sulphur which is about to be precipitated and which at this stage is in a very finely divided condition.

Practically all the trouble encountered with the acid fixing bath is due to the releasing of sulphur and its consequent action on the print that is being fixed.

Impure sulphite of soda, old sulphite or sulphite that has been exposed to the air will contain considerable sulphate, which has no action as a preservative. If such soda is used in making a bath and it becomes milky it is due to a lack of sufficient *pure* sulphite.

Sulphite of soda oxidizes even more readily in solution than in its dry form, so the hardener should be kept in a bottle tightly corked, and the prepared fixing bath should be poured into a bottle if it is to be used a second time. Oxidation will destroy a bath that has never been used if it is allowed to stand in an open tray for some time.

Heat will also cause sulphur to be released from the hypo even though a bath has been properly prepared, so it is safest to make the fixing bath only for immediate use in hot weather.

It is as important to wash prints thoroughly after fixing as it is to fix them properly. Prints should be kept separated in the wash water to allow the fixing solution to be thoroughly eliminated from the emulsion. If prints lie matted together in warm water they may begin to tone in spots, or if they are removed from the water before the hypo has

been entirely eliminated, any portion of the print containing hypo may turn brown after the prints have been laid out to dry.

Acetic acid No. 8 (28 per cent pure) is specified in our formulæ because it is the proper strength for the fixing bath and may be procured at any photographic supply house. You may be depending upon your local source of supply for acids, in which case it is just as well to use glacial acetic 99 per cent pure, provided it is properly diluted before it is added to your other chemicals. To make a 28 per cent solution add 3 ounces of 99 per cent acid to 8 ounces of water.

This dilution of the glacial acid is important, otherwise an excessive amount of sulphur dioxide gas would be given off from the sulphite even though only an equivalent quantity of strong acid was employed.

Knowing the action of the acid fixing bath and taking proper precautions to prevent sulphurization will ensure permanent prints even in the hottest weather. And with a stock solution of hardener it is certainly very easy to dissolve sixteen ounces of hypo in sixty-four ounces of water and add eight ounces of the hardener. There is really no excuse for fixing bath troubles either in summer or winter if we will familiarize ourselves with the above facts and keep the precautions constantly in mind.—*Studio Light*.

A SIMPLE TEST OF A CAMERA

The other day the writer was troubled with mysterious fog markings on negatives made with a vest-pocket spool-film camera, the exact cause of which could not be detected from visionary examination; it was then determined to test the camera. It was done in the following very simple manner, and the trouble successfully traced and prevented for the future. For the first test the camera was taken into the dark-room, and a piece of ordinary rapid bromide paper cut to fit exactly inside the back. This was then loaded into the camera, and an exposure made, and developed in the ordinary manner in the dark-room. On examination of the resulting negative it will be readily seen, by fitting the whole negative into the camera in the same position that the exposure was made, exactly where the stray light enters. This may then be prevented by sticking a small piece of black paper over the part. Another good plan of testing with absolute certainty, if a camera is perfectly light proof, and more particularly the shutter, is to load the camera as before described, and, without making any shutter exposure, to place it in various positions, both open and closed, in strong sunlight for, say, a quarter of an hour. The resulting negative will indicate any sources of fog that perhaps would be difficult to find without such a test being applied. In the same way plate cameras, slides, etc., may be tested without the expense of using dry plates as advocated in times past.—*Amateur Photographer and Photographic News*.



The cover design that we used on the August issue of *THE CAMERA* was from a photograph made by N. I. Wooldridge, Pittsburgh, Pa., and was exhibited at the Pittsburgh Salon.

Our cover design this month, "In Gallant Form," is from a photograph by Alfred Leader, of Bristol, England.

Errata.—On page 485 the author's name should read Frederick D. Burt, and not BART, as we have it printed.

The Twelfth Annual Exhibition of Photographs will be held in the John Wanamaker stores, Philadelphia, March 1st to 17th, 1917. Entries will close on February 17th, 1917. Prizes aggregating \$375 will be awarded. Only such pictures that pass a competent board of judges will be hung.

Further particulars may be had from the Photographic Exhibition Bureau, John Wanamaker, Philadelphia.

The Annual Exhibition does not conflict with the Popular Exhibition in November.

W. C. Smith, Box 2, Blythebourne Station, Brooklyn, N. Y., sends us a sample of "Am-metol"—said to be American metol, and sold at \$25 per pound. In spite of the extremely lengthy chemical name of the product, it has yielded fair results in our hands.

The business of C. G. Willoughby, 810 Broadway, New York, has grown so rapidly that it has been incorporated under the title of Willoughby, Inc., giving the employees, who served with the old firm, an interest in the new business. New premises at 110 to 114 West Thirty-second Street, New York, will be occupied November 1st.

The Auto-Fixt Focus Camera, using standard roll film $2\frac{1}{4} \times 3\frac{1}{4}$ inches, that was announced by Herbert & Huesgen Company, 18 East 42d Street, New York City, several months ago, is now ready for the market. The Auto-Fixt Focus is equipped with the "Acme" shutter, allowing speeds from time up to 1-300 second; Goerz Celor $f/4.8$ or Dagor $f/6.8$ lenses; has a double focusing scale—inside and out—which permits focusing the camera before opening, which is done by simply pressing a button at the side, allowing the front to drop down, which automatically brings the camera in focus. This can be done with one hand only. A descriptive booklet will be sent to our readers upon request.

An unlimited number of positive films of moving pictures can be made from a single photographic negative. After positives of sufficient number to supply the exchanges throughout the country have been made, the negative is usually kept by the producing company. Additional positives can be made at any time. The pictures that appear in a scratched condition are films that have been exhibited considerably. These "second-run" films usually cost the exhibitor less than the films when they are first released. The life of the films is usually sufficient to supply the demand of the theaters.

In order to dry photographic post cards rapidly and well, without risk of curling, the following means have been found quite satisfactory. Procure a sheet of corrugated cardboard, as used for packing, and pin it by the corners to a flat board, supporting the latter in a slightly slanting position, the direction of the slant being parallel with the ridges of the paper. Then take the wet cards, shake off as much water as possible, and bend gently into the shape of an arch with the face uppermost. The ends can then be rested in the lines formed by the convolutions of the paper. When dry, the cards can easily be flattened without cracking.

DECLARATION OF PRINCIPLES OF THE ASSOCIATION OF NATIONAL ADVERTISERS

RESOLVED, That we, members of the Association of National Advertisers, are opposed to advertising of the following kinds:

All advertising that is fraudulent or questionable, whether financial, medical or any other; all advertising that is indecent, vulgar or suggestive either in theme or treatment; that is "blind" or ambiguous in wording and calculated to mislead; that makes false, unwarranted or exaggerated claims; that makes uncalled-for reflections on competitors or competitive goods; that makes misleading free offers; all advertising to laymen of products containing habit-forming or dangerous drugs; all advertising that makes remedial, relief or curative claims, either directly or by inference, that are not justified by the facts or common experience; and any other advertising that may cause money loss to the reader or injury in health or morals or loss of confidence in reputable advertising and honorable business.

RESOLVED, That we recognize our own obligation as advertisers to conform to these principles.

RESOLVED, That we urge upon all publishers and upon all sellers of advertising space or service, a strict adherence to these principles, and that in so far as the exigencies of our individual businesses will permit, we direct our advertising to those mediums which make the observance of these principles their rule and practice.—*Adopted at Dayton, Ohio, May 5th, 1916.*

RECENT PATENTS

A Photographic Roll Holder, of the kind adapted to be detachably held against a camera back. It includes within the outer light tight casing a film supporting board provided along its median line with a handle and with a sight well, through which the numbers on the backing paper may be read, and on each side of the handle are located the film spool center; the feed spool being provided with a ratchet and a co-operating pawl operated from the exterior of the casing, so as to lock the spool and thereby enable the film to be drawn perfectly taut against the supporting board.

A Roll Film Camera, provided with means for allowing the film to be wound only through a correct distance, and also with means for preventing double exposure. The shaft for turning the receiving reel is provided with a spiral track having stops at correct distances. A locking dog travels in the track, and by engaging a stop locks the reel, when it is turned through the predetermined distance. The dog is unlocked, to allow further rotation of the reel, by the operation of the shutter, a cable connection being used for this purpose. A pointer traveling over a scale indicates the number of exposures made.

An Attachment for Roll Film Cameras for the Prevention of Double Exposure. The actuation of the shutter moves a lever in the shutter which locks it against further operations. This lever cannot be released until the film is wound so as to expose a fresh portion. When the film is so wound, an aperture in the edge thereof engages a spring-pressed shoe or cam which, through a cable connection, moves the shutter-locking lever out of the way, so that the shutter may be again actuated.

A Process for Making Colored Motion Pictures. Two negatives of an object are made, one through a red filter and another through a green filter; positive prints are made from the negatives; the negative from the green filter is superposed upon the positive corresponding to the red filter negative, thereby producing a printing negative which gives correct values for white light. A print is made therefrom, and the silver in its image toned to a green color in a vanadium chloride bath, the toning bath so affecting the gelatine that when it is subsequently immersed in a bath of red dye the gelatine will be dyed in inverse proportion to the green toning.

A Three-color Photograph and the Method of Making the Same, which is especially adapted to the manufacture of colored motion pictures. The three negatives are made in the usual way behind the customary filters. The first image is made from the red selection negative by forming a silver image within the gelatine layer and iron-toning it to a blue color. The gelatine is then sensitized with bichromate and printed behind the green

selection negative, whereupon it is dyed a magenta by immersion. The third image in yellow from the blue selection negative is superposed upon the others by a known imbibition method.

An Adjustment for Film Pack Cameras for notifying the user whether the sensitized material in the camera is fresh or already exposed, thus avoiding double exposure. A lever is provided in the shutter which causes the word "Fresh" or "Exposed" to appear at the correct time. The actuation of the shutter moves a lever to the "Exposed" position, while the pulling out of a tab from the pack moves the lever to the "Fresh" position. The film sheets are provided with apertures, which, when the tab is pulled out, engage a movable blade connected with the shutter by a cable.

A Mechanical Arrangement for Synchronizing a Phonograph and a Motion Picture Machine. It includes a clutch mechanism which is thrown into operation when the two machines are not in synchronism, so as to slightly accelerate the phonograph to bring it up to speed.

A System of Color Cinematography, using four light filters arranged in two sets, each set composed of balanced complementary colors; these sets, for instance, being primary red, yellow, blue green, pure blue.

Attachments for Roll Film Cameras of the Kodak type to enable motion pictures to be taken with the camera and then printed in the camera to make a positive film. A further attachment enables the Kodak to be used as a projector for exhibiting the positive film.

TUBE OIL COLORS FOR BROMOIL

The use of ordinary oil colors for artists in oil and bromoil printing is brought forward by a leader in *The Amateur Photographer*.

"For those who only occasionally wish to make either an oil or bromoil print in a different tint to the customary one, the use of tube oil colors, which can be employed for the purpose, comes as a great boon. Tube oil colors are not sufficiently stiff or tacky by themselves, but they can soon be made of the right consistency, by either mixing some matt varnish or Japan gold size with the pigment. This is easily accomplished by squirting a little color on the palette, and mixing with it as much of varnish or gold size as can be drawn from the bottle on the end of a match. The pigment and varnish or size should be well mixed together on the palette with a palette knife before commencing to ink up a print. If matt varnish is used for stiffening the color or pigment, generally it is necessary to mix some time beforehand, to bring it to the right stiffness. On the other hand, if the pigment is wanted for immediate use, Japan gold size should be used instead

of matt varnish; the pigment or ink will then be of the right stiffness at once, or in some cases a little thinning down may be necessary. For thinning the ink, tube medium or a very little linseed oil can be employed in the usual manner. Experiments, too, in the combination of ordinary tube oil colors and celluloid varnish made with amyl acetate have given promising results, the prints having the quality of drying with extreme rapidity, which, under certain circumstances, is an advantage. The late Arthur Marshall, if we remember rightly, used ordinary tube oil colors for his earlier oil prints. The required quantity of the color was spread on a palette overnight, and was of the necessary consistency for use the following day."

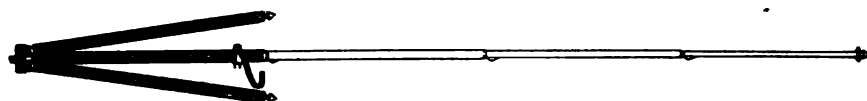
SODIUM CITRATE FOR OVER-EXPOSURE

The peculiar restraining action of sodium citrate seems to have been forgotten, although at one time it was much in evidence. It is of much value where the exposure has been excessive, and although somewhat slower in manifesting its action than bromide, it is far more energetic. It may be used directly in the developer or as a preliminary bath in which the known over-exposure is immersed. When used as antecedent to development, two grains to the ounce of water will be found to be sufficient. The low price of the citrate, as compared with the excessive cost of bromide at present, is certainly an incentive to its use. The citrate becomes a most useful auxiliary in the saving of a plate otherwise hopelessly over-exposed.

We expose a plate one-half second, and another to which we give five seconds; that is, the latter receives ten times the exposure upon the subject above that of normal. The half-second plate produces a good quality of negative, demonstrating that the time was about correct; at least, by no means under-developed, and the developer employed was normal. Before developing the excessively overtimed plate, we submitted it to a bath of sodium citrate of the above-mentioned strength for two minutes, and then used the same developer employed for the normally exposed plate. On comparison of the latter negative with the former, the only difference in appearance was in a certain degree of desirable softness, doubtlessly due to the excess of time, but the contrast was pleasing, and the product would have been accounted the result of proper time. Without the citrate it would have been hopelessly ruined, and we do not think that any dose of bromide could have saved it; at any rate, not have yielded as pleasing a result. The energy of bromide is sometimes dissipated and extends its influence only to a certain degree.

During the hot weather, we acknowledge, there is some tendency to action upon the gelatine from the citrate, but the addition of a little alcohol obviates the danger to frill.

Full tripod service means a



Kodak Metal Tripod

The rigidity that comes with metal construction, the convenience that comes with extreme compactness are distinctive features of the Kodak Metal Tripod.

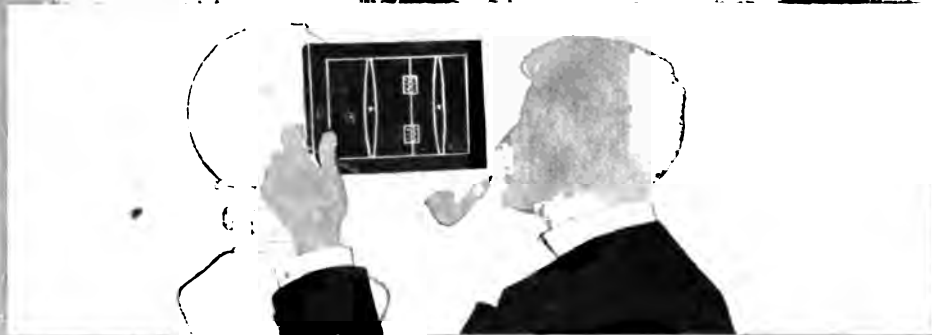
Nos. 1 and 2 are equipped with revolving heads so that the angle of view may be changed without shifting the tripod and No. 6 is a pocket tripod—the legs fold flat.

THE PRICE.

	Sections	Length		Weight	Price
		Closed	Extended		
Kodak Metal Tripod No. 0	3	15½ inches	39½ inches	15 ounces	\$2.25
Kodak Metal Tripod No. 1C	4	15¼ inches	48¾ inches	25¼ ounces	3.00
Kodak Metal Tripod No. 1	4	15 inches	48½ inches	24¼ ounces	3.25
Kodak Metal Tripod No. 2C	5	13¼ inches	49¾ inches	26 ounces	3.75
Kodak Metal Tripod No. 2	5	13¼ inches	49½ inches	25 ounces	4.00
Kodak Metal Tripod No. 6	6	11¾ inches	40 inches	24 ounces	6 00
Leatherette Case, for No. 0 and No. 1					.75
Leather Carrying Case, for any style					1.75

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Volume Twenty

OCTOBER 1916

Number Ten

ENLARGING—FITTING THEORY TO PRACTICE. PART I. C. H. CLAUDY

THERE are learned books about the optics of the camera and the lantern, the lens and the negative, the paper and the image, all of which will repay study. But most amateurs are after results first and abstract knowledge later.

These two papers are intended to present to the reader the essentials of the theory of enlarging, and the practical application of the theory to practice without any intention to go more deeply into the subject than is necessary to get results.

It seems obvious that he who knows something of the "why" of what he does, will, in the long run, get better results in any photographic operation than he who knows only that he must do thus-and-so to obtain such-and-thus a result. The one is in a position to reason about his work, the other but a slavish manipulator of apparatus, who is lost the instant he gets off the beaten track or is confronted with some problem not set down in his instruction sheet.

So it seems logical to begin with a short exposition of the theory of making enlargements.

There are many methods. Two, however, stand out above the rest in amateur practice—and these two are but modifications of the same thing. They are the processes of making enlargements by the use of an enlarging lantern, and that of making enlargements in the camera. The first usually employs an artificial light source, the other a natural source. Each has special advantages, which will be discussed later.

For the purpose of illustration, however, the lantern will be considered, as it is somewhat easier to use as a set of pegs on which to hang the cloth of theory.

A lantern, in use for enlarging, consists essentially of four parts (see diagram in Fig. 1): They are, in the order in which they are used, first, a source of light (B), contained in a dark-chamber or lamp-house (A); second,

apparatus for collecting and directing that light (CC); third, a means for holding an image or negative (D) in proper position, and fourth, the projection lens (E), which forms the image on the screen or sensitive paper (F).

The light source may be electric, gas, acetylene or oil. Each one brings its own advantages and disadvantages. Thus, oil is slow and yellow in color, but having a large flame, is easy to handle. Electric arc is the most brilliant, but because condensed into the smallest point possible is difficult to handle without screens of ground-glass to cut down its intensity.

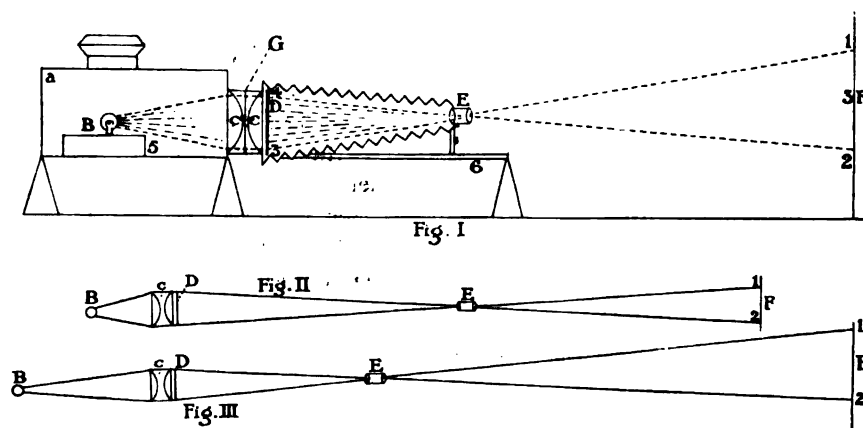
In all lanterns there is a means for varying the distance (5) between the light source and the condensing lenses—two plano-convex lenses mounted curved side to curved side (CC).

These condensing lenses collect the light emanating from the light source, and are supposed to form a real image of that light source at the optical center of the projection lens (E). I say "supposed," because in practice it is customary to interpose a sheet of ground-glass (G) between the two condensing lenses, sometimes another beyond the condensers and between them and the negative. The diffusion of light which they produce, of course largely destroys any effective "focus" of the light. Generally speaking, the function of the condensers is to gather a lot of light and put it where it is wanted.

Just beyond the condensers, and close to them, in order to utilize all the light possible, is the negative carrier, in which the photographic negative is placed (D), film side toward the projection lens, glass side toward the condensers.

Connected to the negative holder by a bellows is the front of the lantern on which is mounted the projection lens (E).

In operation, the lantern is used in a dark-room, and it will help very largely in understanding the process, if one conceives *the whole room is a gigantic camera*, inside of which the operator stands. With this idea in mind, the inclosed light source is the *sun*, the negative is the *landscape*, the projection lens is the *camera lens*, and the screen, on which is mounted the sensitive paper, is the *plate or film*. The only reason this comparison breaks down is because





"MARGERY." CHARLES H. DAVIS, NEW YORK



"IT'S SO GOOD." © G. R. REEVES, ANDERSON, IND.
1916 SALON PICTURE. P. A. OF A. AT CLEVELAND, O.

a landscape is illuminated by direct and photographs by reflected light, whereas in the lantern the "landscape" (negative) is illuminated by direct light, which is not reflected from it, but passes through it and the lens *directly* to the "plate," which is here the bromide paper.

Before we can make a photograph in any camera, except the very small or "fixed focus" instruments, we have to adjust accurately two distances—one, the distance from lens to object and the other, the distance from lens to plate. We know that these two distances alter in a direct relation to each other. The closer we bring the lens to the object the further we must move the lens from the plate. The further away from an object we get the closer must be the film and lens, until we reach the point we call "infinite focus."

So we will expect to have two distances in the lantern which must be adjusted with relation to each other. They are the distance between projection lens and negative (D to E) and the distance between screen and projection lens (E to F). The greater the degree of enlargement, the greater the distance from lens to screen and the less the distance from lens to negative, and *vice versa* (see Figs. 2 and 3). By altering these distances we can make any size enlargement we desire, limited only by the size of the paper we can buy and the ability of the negative to stand enlarging without producing too fuzzy an image. If the draw of the bellows of the lantern is long enough, we can make "ensmallments" if we desire, although such work is more easily done with the laboratory camera than with the lantern.

But there is a third distance which we must manage in the use of the lantern—the distance between the light source and the condensers (B to C). The light must be moved back and forth on the rack (5) until the condensers, forming a cone of light, are properly spaced between the condensing lens and the light source so as to throw the *point of the cone of light* into the former.

This all sounds rather complicated, but is sufficiently simple in practice. Failure properly to adjust the negative-lens distance or lens-screen distance, produces an out-of-focus result. Failure properly to adjust the light-source-condenser distance results in uneven illumination, and an enlargement, the parts of which are lighter or darker than the rest.

Not only must the distance in linear inches between light source and condensers be adjusted, so that the cone of light is the right length for the particular size enlargement being made, but the light source must be so centered with regard to the condensing lenses that the cone of light formed by them accurately hits the projection lens. For this reason all light sources in lanterns have not only fore-and-aft motion but an up-and-down one, and a side-to-side one also.

If a lantern be set up for use, the light turned on and a sheet of white paper put on the screen, then the conditions are right for preliminary focusing, which all lanterns must undergo before the negative is put in.

It is now that we find out whether we must put ground-glass between the condensers or not.

Let us suppose that we are going to make an 8 x 10 enlargement from a 4 x 5 plate. Our projection lens is twelve inches in focus. For a two-time

or two-diameter enlargement it must be eighteen inches from the negative and thirty-six inches from the screen. We place lens and screen roughly at these distances.

Examining the screen (F) now, we find a curious light circle upon it, (between 1 and 2, Fig. 1). It has a half-moon shadow on one side and a glare of light on the other. What we need is a plain, even circle of illumination. We proceed to get it by moving the light source (B) in the lantern. We get rid of the moon by centering the light, moving it around until the shadow moon has disappeared. Then we focus the light by moving it back and forth until the circle of light on the screen is equally brilliant all over (see cut 6, Fig. 4).

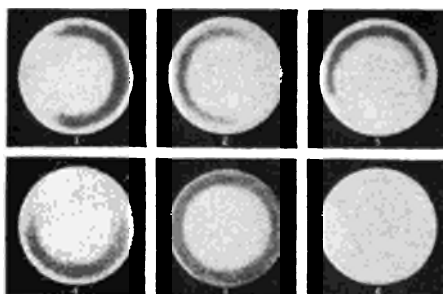


FIG. 4

When a shadow appears, as in cut No. 1, Fig. 4, the light is too far to the right. If like cut No. 2, the light is too far to the left. If like cut No. 3, the light is too high. If like cut No. 4, the light is too low. If like cut No. 5, the light is in the center of the condenser, but too near. If the dark ring has an orange-colored border, the light is too far away. Cut No. 6 shows the appearance on the screen when the light is in the exact center of the condenser and just the right distance away.

But it may be that at the most brilliant point, a diffused image of the light source itself appears upon the screen at (3, Fig. 1).

If this is the case we must remove it, using ground-glass between the condensers to do so. With a Welsbach mantle as light source, an image of it will appear much less readily than with an arc or a nitrogen madza lamp as light source. Every lantern is a law unto itself in this regard, and no one should attempt to make enlargements with a new lantern until he has played around with the image circle, the light source and the condensers, enough to know whether, with the light properly focused, an image of the light source forms on the screen or not. Put a single fine ground-glass between the condensers, and if that doesn't eradicate the image of the flame or filament on the screen, add another beyond the condensers. A perfectly plain, evenly-illuminated circle of light on the screen is the first essential for a good enlargement.

This accomplished, alter the relation between screen and lens. Proceed as if you were going to make a four-time enlargement—that is a 16 x 20 from a 4 x 5 negative. Here the screen must be sixty inches from the twelve-inch focus projection lens, which itself must be fifteen inches from the negative.



"THE VIOLINIST" GEORGE J. KOSSUTH. WHEELING, W. VA.
1918 SALON PICTURE. P. A. OF A. AT CLEVELAND, O.



"STUDY." I. BUXBAUM, BROOKLYN, N. Y. 1916 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.

Place screen and lens in these positions, and behold, the clear image of light you had before has disappeared. Again you find moon-shaped shadows and uneven illumination.

You will find that the image circle of light will clear up as you draw the light source *away* from the condensers (compare B, C, E, F, in Fig. 2, which is of a small degree of enlargement, with the same points in Fig. 3, showing a greater degree of enlargement). The operation teaches that for every change in the magnitude of the enlargement, *a corresponding change must be made in the focus of the light source*; that is, the light source must be moved with relation to the condensers—*further* from them as the size of the enlargement *increases*, *nearer* to them as the size of the enlargement *decreases*.

So much for the simple theory of the operation of a lantern. So simple a thing would seem to need little expounding, yet in the failure thoroughly to understand the triple-compound relation of distance of light source to condensers, of negative to lens and lens to screen, lies a good half of the troubles which beset the amateur struggling with his first lantern.

In the second paper some of the operation difficulties will be taken up and what, perhaps, seem lions in the path to the fields of good enlargement will be shown to be innocent lambs, which flee at the first sight of elementary knowledge.

(To be continued.)

BACKGROUND RELATIONS

THE primal purpose of the background is to give value to the portrait, to emphasize its fine points or to subordinate parts of the figure essential to its proper interpretation, but distracting to the composition and decorative effect if allowed to assert their presence too definitely. The background, therefore, is subordinate to the portrait and must be treated as an accessory only; a support to the figure, not a competitive associate.

The background, though requiring subordination, should not be treated slightly, but must be made agreeable in itself as well as in its relation to the picture by every means that the artist can have recourse to. Every means, however employed, must be consistent with truth and reality; that is, such as shall be in congruity with the subject.

To escape the responsibility attendant upon the background association, the photographer of artistic taste often tries to cut the Gordian knot of the difficulty by recourse to the exclusive use of a plain ground. It cannot be denied that a plain ground, properly related in tonal value to the head, is capable of producing beautiful effect. But, candidly speaking, the treatment of the plain ground presents more difficulties to insure pictorial presentation than a ground which has some features of interest attractive to the eye. There is, first of all, the danger encountered of silhouetting the portrait too definitely; and, secondly, of destroying the suggestion of atmosphere about the figure and spoiling the artistic relief in the mere stereoscopic effect alone obtained. Besides, the head

itself, that is a bust picture, is the only variety of photographic portraiture amenable to a treatment of a plain ground. A full length figure gives too much an impression of poverty of resource in the artist, because the range of gradation in the photograph is much more limited than it is in the painted portrait, where, in the hands of a master, and a master only, the plain ground may be managed so as to give a fine atmospheric effect.

The Italian painters of the 15th century, particularly of the Venetian school, sought to relieve their figures by backgrounds lighter in tone, thus emphasizing them naturally; but this standing-out effect required such consummate ability to be effective that the painters who followed preferred less contrasting association. Manet, and others of recent times, reverted to this style and with good results, but Whistler showed in his figure-compositions an ideal way of utilizing ordinary backgrounds, such as a wall, or wainscoting, or curtains, and even domestic furniture, so as to give a most delightful and, at the same time, natural and appropriate setting to the figures. This is a device within the reach of the photographer which he should be quick to make use of, but he must have a care that the lines and masses of the things of the background are so disposed as not to conflict with the paramount element of the picture, the portrait itself.

Reynolds did not favor the strong relief effect of the Venetians. He sought for breadth and fullness by supporting strong shadows in the figures and by still stronger shadows in the background; making a black cloak, for instance, assume the look of a rather dark grey tone by extreme depth of tone in a curtain, or some other portion of the background. The dress, or figure drapery generally gives the predominant tone, consequently it must be duly balanced and distributed.

Rubens was very partial to dark clothes, and he manages to agreeably oppose their tones to brighter areas of his picture so as to get depth and richness in the entire picture. But Titian often makes use of a grey dress, or a subdued white one, which he sets off with warmer tones.

Van Dyck in his portrait of Queen Henrietta puts a white dress against the sky of grey with good results. A touch of positive tone here and there is demanded when this is done. A dark rose in the hair, or upon the bosom, will preserve a tendency to coldness, which is liable.

A variety of pleasing effects is obtainable if we seek to please the eye by nice management of relation of the associated tones of background and subject. You must first of all consider the nature of the subject under your treatment. Diagnose it artistically, and do not suffer yourself to be distracted by the individual attractiveness of either the model or the background. Some subjects require delicate tones, others must be made to glow with vigor. Try to make something which appeals to your judgment as much as to your vision of the beautiful, and never merely copy what some shining light of the profession pronounces transcendent. Find out the key of the portrait, study and keep the whole picture in harmony. Make the background your valuable ally, the instrument for giving utterance to artistic taste.



"STUDY." A. O. TITUS, BUFFALO, N. Y. 1916 SALON PICTURE.
P. A. OF A. AT CLEVELAND, O.



"THE DANCER." EDWARD H. WESTON, TROPICO, CAL.
1916 SALON PICTURE. P. A. OF A. AT CLEVELAND, O.

HOW TO BIND THE CAMERA— JACQUILINE THOMPSON

I HAD a lot of photographic magazines, including several years of THE CAMERA that wanted binding, but being odd and not of uniform size I did not think it would pay me to have the job done professionally. In this exigency I resolved to see what amateur effort in that particular line was capable of producing; in short, tackled the job myself.

While results of necessity leave much to be desired, on the other hand I am astonished that on a first attempt I should do so well. In order therefore that aspirants in this particular line of endeavor may profit by my venture, I submit my plan of procedure in attaining so satisfactory a result.

Take a year's issue of THE CAMERA and remove the covers, scraping away all hardened glue that may be clinging to the back. Next, with a small instrument such as a screwdriver, remove all wires that bind the pages together. Discard all advertising sheets possible, but where there is reading matter on one side and advertisements on the other, it may not be possible to discard all, use judgment in deciding on what to retain.

Separate the pages, beginning with the January number, glue the pages together in the following manner: Lay the first page face down upon a table; apply glue, paste, or mucilage to a width of a quarter of an inch along the back; press the next page into contact; paste all the pages together thus. Go through the same procedure with the month of February, then take up March, and so on through all the year. All the months having been thus severally attended to next paste them together, making a single volume of the twelve numbers. Make certain in pasting that they are face down, so that when turned over the month of January will lead the procession.

Once all the pages having been made to form a book, cut two sheets from white paper and paste along the back line and attach to the book back and front. These will form the fly leaves usually to be found in bound volumes.

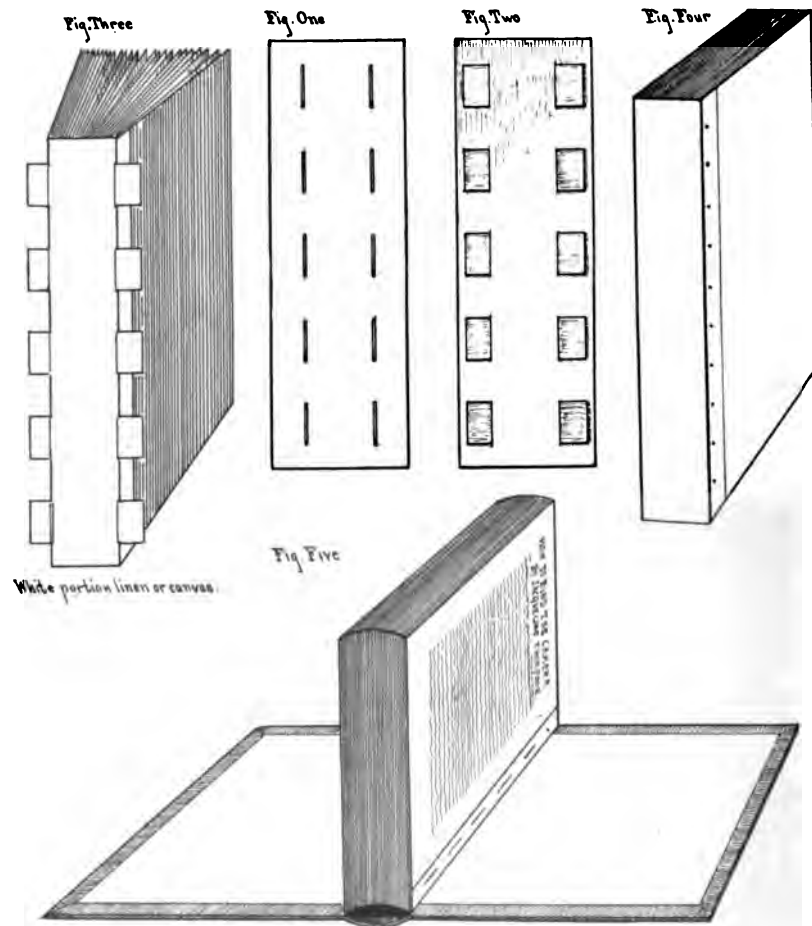
Next get two pieces of smooth board of the dimensions of a page, and place one on either side of the volume; put under a heavy weight (a pile of magazines if nothing better offers), until the adhesive has had time to set. A letter-press would answer admirably here, but in lieu of it a couple of hand-screws would serve. When well set, apply a coat of adhesive to the back, thus filling interstices; repeat operation when dry. When thoroughly hardened the volume may be considered ready for the cover.

For an adhesive I have found Le Page's tube glue and Fox's brand mucilage cement (the latter bought from a Woolworth 5 and 10 cent establishment in Boston) to adequately serve. I stick the pages together with glue, reserving the mucilage (clear as water and of bull-dog tenacity as regards grip) for such parts as come within the range of vision; photo pastes as a rule have not sufficient holding power for such a purpose, but are useful in working upon the cover.

Take a piece of muslin, linen, or canvas the length of the book and an inch wider in width than the back is thick. Cut slits an inch wide in it to the number of five, as exemplified in Figure 1. Next cut five muslin strips an inch wide and three inches long in the manner shown in Figure 2. Apply a coat of adhesive to the back of book and press muslin into close contact. Figure 3 exemplifies how the work should be done. Take note of how the ends of the one-inch strips are left hanging loose for a purpose to be explained later. The surplus muslin that protrudes beyond the book's thickness is stuck to front and back pages.

Twelve numbers of THE CAMERA, even with the advertisements left out, make a book of quite good thickness. My advice would be to have but six numbers to a book, thus constituting two volumes to a year. Should the twelve numbers be bound in a single volume I am afraid further reinforcing would be necessary, in which case proceed as follows.

Draw a straight line along the back a quarter of an inch from the edge, and at regular intervals mark dots with a pencil, say ten or a dozen, as shown





"REVERIE." E. E. DOTY, BATTLE CREEK, MICH. 1916 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.



**"STUDY." J. D. STRICKLER, PITTSBURGH, PA. 1916 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.**

in Figure 4. Then bore holes with brace-and-bit, revolving awl, or some such instrument. Draw stout linen thread through the holes and securely tie the ends.

Cut from heavy thick cardboard two pieces a half inch longer and a quarter of an inch wider than the book. To cover these boards brown Holland (used for window shades) or linen may be made to serve, presuming that the regular bookbinders' cloth cannot be had. A glance at an ordinary portfolio will sufficiently furnish an idea as to how the job may be effected with a paper cover alone, providing that leather or stout cloth be used for the hinged portion. The tough brown Swedish manilla wrapping paper, now so much used, makes an excellent covering for the cardboard sides.

Having chosen the covering, cloth or paper it matters not which, spread it out upon a table and place upon it side by side the cardboard pieces, leaving a space (the thickness of the volume plus a half inch) between. This space is to form the *hinge*, and sufficient room must be allowed to insure easy opening and shutting; with a pencil mark around the cardboard, allowing a margin of a half inch; trim away the portion not required. Paste the cloth to the boards, with a soft cloth rubbing into contact, and neatly fold the surplus over the edges. Examination of a book will furnish an idea as regards how this can best be done.

When cloth and cardboard have been mucileged together, lay the book out flat and place books upon it while drying. When dry—which will be in a day—spread out as shown in Figure 5 and glue down the inch strips (left loose until now) to the covers, and place under a heavy weight (keeping the pages upright as shown) until dry. Next take a sheet of white paper twice as wide as the page of the book and the same length and double it in the center; paste half of it to the inside of the front cover; make another similar sheet and repeat operation with the back cover; paste along the insides of the loose leaves, say a half inch in width, and press up against the muslin that overlaps.

I have herewith given the directions for binding with boards, but I personally do not go to that extent, contenting myself with cover paper, so com-



"EVENING SHADOWS."

HAROLD WAGNER

monly employed today by amateur photographers to mount prints. Heavy cover paper glued to the back of the book and along a half inch strip overlapping the fly leaves I have found to answer every purpose. The title of the magazine and the year being cut from discarded covers is then neatly pasted on. A very neat and workmanship effect is thus imparted to the volumes, and if desired name and year may be applied to the backs also.

The British Journal of Photography Almanac, while an admirable work of the kind, is most frail as regards binding. In thickness it is some two and a half inches and heavy. A few years ago I had the misfortune to drop a volume I had just purchased of the dealer, and was mortified when the whole affair burst apart, the fall contributing to loosening the sewing.

To remedy matters I glued a sheet of thin cartilage writing paper (extremely tough and difficult to tear) to the back, rubbing in well so as to insure absolute contact. When this was dry I followed it with another, allowing it on both front and back to form fly sheets. I then made a cover of heavy brown drawing paper, gluing on in the same way. That was a half a dozen years ago, and the hardest kind of usage in the interval has been insufficient to start anything. So successful has it been that in the intervening years as I have received the *Almanac* I have reinforced the binding in the same manner, thus taking time by the forelock.

FINDING A PUBLICATION MARKET FOR PHOTOGRAPHS—W. CLEMENT MOORE

MANY photographers have written the author recently, and the substance of all the letters may be stated briefly in the one question: "How shall I find a market for my prints?" From these letters I turn to another file of letters from publishers, and on the very top I find this brief but pointed letter from *The Brooklyn Eagle*:

Dear Mr. Moore:

Please be on the lookout for good pictures of Brooklyn people.

This is important.

Yours very truly

E. F. HANSON, *Editor*.

So you see publishers are quite as anxious to *get the right kind of pictures* as photographers are to sell them. Now *The Eagle* pays one dollar each for all of the photographs printed, and there is a demand summer and winter FOR INTERESTING PICTURES of Brooklynites engaged in work or pleasure—no matter where they may be.

But you must understand the significance of good pictures and Brooklyn people, for the best picture in the world of a Philadelphian would not appeal in this case nor would a poor picture of a Brooklynite. You must meet the requirements.

The demands of this one great daily may be multiplied by similar demands



"STUDY." DUDLEY HOYT, NEW YORK. 1916 SALON PICTURE.
P. A. OF A. AT CLEVELAND, O.



WM. M. CHASE, ARTIST

JAMES W. PORTER, YOUNGSTOWN, O. 1916 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.

from about four hundred other *big* dailies in America, with the distinct understanding that the Chicago daily will want photographs of Chicago people who are doing something of importance in your neighborhood. Remember, too, that persons happen to be spending a vacation in your locality and you can photograph them while playing golf, tennis or following any other sport—that picture will be favorably received.

The first training you need, however, is to get thoroughly acquainted with the magazines and publications of America—this does not mean work, but real pleasure. Get the habit of buying a *different* magazine every week or oftener. It will be only a small sum spent and you will get a certain amount of pleasure from its contents. Through this habit you will know the different publications intimately—you will have them on file so that you will become familiar with the kind of illustrations they use—you will be able to photograph a greater variety of subjects because each magazine will open up to you new opportunities, and if you are wise you will make a record of each magazine, kind of prints used, address of the editor and various other points which will be of value to you in your work.

In purchasing these magazines do not confine yourself to the popular ones, but buy trade and technical papers of every kind. You might not be able to buy many of these at the bookstands, but the various lists of publications and directories printed by advertising agencies will have thousands of publications listed from which you may make selections. As a rule you will receive a sample copy if you write the publisher and enclose ten cents—some cost more, but the chances are they will send a sample for that sum—of course, if you know the correct price, it is better to send just the right amount.

You never can tell where the right market may be. For instance, here on my desk is a copy of *Case and Comment* published at Rochester, N. Y., and I find it to be an excellent market for photographs of scenes at great trials, photographs of successful lawyers, etc. Be on the alert—pay no attention to the *class* of the magazine, but give all of your attention to its needs.

Before closing this brief article it might be well to impress upon your mind the important fact that nearly everything in nature photography should be photographed about six months or a year before you offer it for publication. For instance, from August to November the country everywhere will be abloom with dahlias, asters, chrysanthemums, and various other plants and flowers. Hundreds of photographs should be taken of the choicest of these, being careful to get the correct name of each as it is taken—but none of them should be offered to the magazines before February, March or April of the following year. Then make up fresh prints and send to such publications as:

American Florist, Chicago, Ill.

American Botanist, Joliet, Ill.

American Homes and Gardens, New York, N. Y.

Garden Magazine, Garden City, N. Y.

And many other publications of a similar nature.

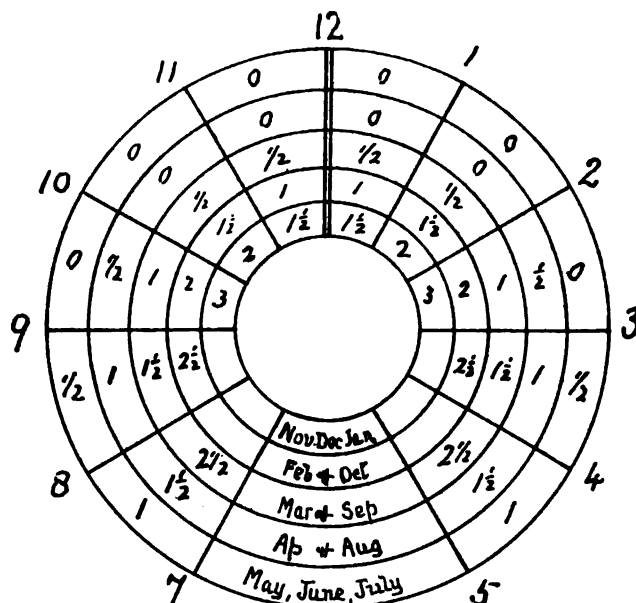
EXPOSURE BY SIMPLE ADDITION— F. C. LAMBERT, M. A., F. R. P. S.

A CORRECTLY exposed plate will develop itself," is an old saying which, without being literally true, yet rightly understood, conveys an important truth. The perfect negative—if such a thing exists outside the sphere of imagination—is one which has had correct exposure followed by correct development. Therefore, correct exposure, at any rate, takes us half way.

There are three ways of arriving at—let me say—*satisfactory* exposure, viz., by the use of tables, by meter, and by trial and error, *i. e.*, using several plates and giving each a different exposure. There is, however, yet one more, and that often the best of all—experience. But the experienced old hand even may go considerably astray when faced with subjects or conditions outside his previous experience. The trial and error method is too slow, costly, and not always applicable. For each of the two first named much may be said; yet after some years' experience of both, I plump for tables—whilst admitting that the meter method at times is very helpful.

Tables have been called tedious, tiresome, complicated, involving a bothering multiplication and division of fractions. But all this by the aid of the tables accompanying this article, is reduced to *simple addition*. *If the reader can count a *shilling's worth of pence and half-pence he can apply this system.*

In estimating exposure by tables there are *six* factors to take into account; the month, the hour, the weather, the plate speed, the stop, and the subject.



*This being an abstract from a British magazine, the shilling represents twelve pennies or pence. For clearness, the twelve pence equals the divisions of the hours.



FRANCES OTT

F. S. JACKS. MUSKEGON, MICH. 1916 SALON PICTURE.
P. A. OF A. AT CLEVELAND, O.



"STUDY." MAY L. SMITH, BINGHAMTON, N. Y. 1916 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.

This sounds rather formidable, but most of us select a plate and keep to it, at any rate for a while, so once that point is considered we do not have to alter that factor. Then again as regards the month, that also lasts for some time; and perhaps the state of the weather keeps pretty settled for the day, so that is a fixture for the time being. Then again with much of our hand-camera work we get into the way of using a favorite stop. Thus very often during a whole day's work all we have to do is to keep an eye on the hour and the subject.

The preceding table is arranged most conveniently after the manner of a clock face, the double vertical line indicating noon. The figures for the different months are enclosed between various concentric circles.

We see at a glance that corresponding to the hour and month are various small numbers, 1, 1½, 2, etc.; these we will call *key numbers* or pence and half-pence. For instance, the innermost ring for the months of November, December and January shows 1½ for 11 A. M. to 1 P. M., but 2 for the hour 1 to 2 P. M., and 3 for 2 to 3 P. M. Suppose now we are at work in March or September, and the time is between 10 and 11 A. M. In the corresponding ring and hour we find the key number is ½, and we observe that this key number will last us from 10 A. M. to 2 P. M., but after that hour we shall have to change it for 1 between the hours 2 and 3 P. M., and again change to 1½ for 3 and 4 P. M.

(B) WEATHER

Key No.

Bright sun and light clouds	0
" " no clouds	½
Sun clouded over, diffused light, no distinct shadows.....	1
Dull, grey day, clouded sky	1½
Gloomy, stormy.....	2

For all practical purposes we may classify the weather—*i. e.*, the light conditions—into five stages or classes: (1) Bright sun and *thin* light clouds, the latter serving to diffuse and scatter some of the sun's rays, thus giving the best possible conditions of lighting. (2) Direct sun and no clouds. The beginner often makes the pardonable mistake of thinking that this condition of affairs must give the best lighting, forgetting that without any diffused light the shadows must be at their darkest. (3) Sun completely hidden by clouds, so that there is not enough direct light to give distinct shadows. (4) Dull, *i. e.*, the condition when the sky is so clouded that there is no indication of the sun's position. (4) Gloomy. This is similar to "dull," only decidedly "more so." (Though it is not easy to describe verbally, yet that matters little, as we in this country know what it is only too well from experience.)

(C) PLATE SPEED

Relative Exposure Times	H. and D.	Watkins	Wynne	Key No.
1	400	588	155	0
1½	270	396	126 Ultra rapid	½
2	200	294	110 Extra rapid	1
3	133	193	90 Rapid	1½
4	100	147	78 Medium and ordinary..	2

It is convenient to classify plate speeds into four, or rather five, classes: four for every-day use, and a fifth which is chiefly if not entirely ideal. It will at once be noted that for each class are given the equivalent speed numbers according to the Hurter and Driffield, Watkins and Wynne systems. At the extreme left are the numbers 1, 1½, 2, 3, and 4, showing the relative equivalent exposures for the five typical speeds; that is to say, 4 seconds with 100 H. and D. plate, being equivalent to 1½ seconds with a 270 H. and D. plate, and so on. These may be taken as roughly equivalent to the groupings of the various brands as set forth in the Exposure Table.

The speed numbers here given may be taken as an average, extending say 25 per cent either way. Thus we may conveniently group together three plates whose H. and D. numbers are 225, 200, 175.

See a later note in connection with color screens.

(D) STOPS

Stop	Key No.	Stop	Key No.	Stop	Key No.
<i>f</i> 4 0		<i>f</i> 13.8 3½		<i>f</i> 44.7 7	
<i>f</i> 4.9 ½		<i>f</i> 16 4		<i>f</i> 55.4 7½	
<i>f</i> 5.6 1		<i>f</i> 19.6 4½		<i>f</i> 64 8	
<i>f</i> 6.9 1½		<i>f</i> 22.6 5		<i>f</i> 78.4 8½	
<i>f</i> 8 2		<i>f</i> 27.6 5½		<i>f</i> 90.5 9	
<i>f</i> 9.8 2½		<i>f</i> 32 6		<i>f</i> 110.8 9½	
<i>f</i> 11.3 3		<i>f</i> 39.1 6½		<i>f</i> 128 10	

In this table are the stops numbered according to the *f* or aperture system; that is, a stop with a diameter opening of three-quarters of an inch is marked



"AT THE GRAIN ELEVATOR."

H. T. WEBER, ERIE, PA.



"MY MOTHER." JANE REECE, DAYTON, O. 1916 SALON PICTURE.
P. A. OF A. AT CLEVELAND, O.



"BOY WITH CURLS." PASQUALE S. CULOTTA, BALTIMORE, MD.
1916 SALON PICTURE, P. A. OF A. AT CLEVELAND, O.

f 8 in the case of a 6-inch focus lens, which simply means that the focal length (f) divided into eight equal parts gives the diameter of the stop opening (six-pence divided equally by eight gives three farthings). We commence the series with f 4, as that is the largest opening in anything like common use in daily work. But in many modern anastigmat lenses the largest aperture is about f 6. Most lenses of the R. R. kind do not go beyond f 8. Cheap hand-cameras with single lenses often do not go beyond f 11 or perhaps f 10.

The beginner may be reminded that in all ordinary work the decimal figure may be approximated. Thus f 13.8 may be taken as f 14, and so on.

(E) SUBJECTS—OUTDOORS.

	Key No.
Light clouds, distant snow landscape.....	1
Ordinary clouds, distant sea.....	1½
Dark clouds and sea, distant mountains.....	2
Mid-distance shipping, open beach, snow landscape.....	2½
Open valley, no foreground, panorama.....	3
Figure boats on open shore, waves, open lake and river.....	3½
Open landscape, light foreground, mid-distance buildings.....	4
Wet street, cattle in field, open square.....	4½
Streets, foreground cottages, landscape, foliage foreground.....	5
Foreground figures, groups, farmyard cattle, near light buildings.....	5½
Landscape, dark foreground, rocks, trees, near buildings in shade.....	6
Shady gardens, open woodland, figures in shade.....	6½
Architecture, details, doorways, porch.....	7
Foreground shrubs, large still-life objects.....	7½
Half-length portrait, diffused light, conservatory.....	8
Flower studies in bright light outdoors.....	8½
Flower studies in diffused light, picture gallery.....	9
Dark objects in shade, light cloisters, woods.....	9½
Medium dark cloisters.....	10

INDOORS

Copying black and white photograph, engraving.....	6
Copying toned print, light water-color painting.....	8
Still life, no very dark objects.....	10
Portrait, light drapery and light background.....	11
Gallery with skylight.....	12
Portrait, dark drapery, workshop.....	12½
Still life, dark objects, flowers, fruit, greenery.....	13
Museum, light room.....	13½
Cathedral or church, light, nave or general view.....	14
Ordinary rooms.....	14½
Aisle, light glass windows.....	15
Fonts, etc., in shaded situations.....	15½
Aisle, stained-glass windows.....	16
Dark rooms, cottage interiors.....	16½
Choir of cathedral.....	17
Details, carving, tombs in choir.....	17½
Crypt, light.....	18
Crypt, medium.....	19
Crypt, dark.....	20

An attempt has been made to include as many typical subjects as the amateur is likely to encounter in ordinary work. But it is quite likely that even with this rather long list he finds the specific subject of his attention not mentioned; for instance, a monument in the shade of a tree. This would come into the group, "Shady gardens, figures in shade," key number, 6½; or a smith shoeing a horse in an open shed. Probably in such a subject the interior background part would be about as dark as "Dark objects in shade, light

cloisters," etc., key number, $9\frac{1}{2}$; it might, however, be considerably lighter or darker. Architectural details inside building, carvings, monuments, fonts, misereres, etc., vary considerably as to the amount of light falling on them. The color of the glass of the windows illuminating them has to be noted and allowed for. But generally one may say that the darker the subject (*i.e.*, its own color and the lighting falling on it), the greater the need for generous exposure.

EXAMPLE V

December; 11 A.M.—1 P.M.; dull; plate, 200 H. and D.; general view, interior; average English village church, clear glass windows; stop f 16.

	Key No.
Table A, December, 11—1.....	$1\frac{1}{2}$
B, dull.....	$1\frac{1}{2}$
C, plate 200.....	1
D, stop f 16.....	4
E, average church light.....	14
Total.....	22

Corresponding exposure, 8 minutes.

(X) EXPOSURES

Total Key No.	Exposure	Total Key No.	Exposure	Total Key No.	Exposure
3	1-1,000th sec.	$10\frac{1}{2}$	$\frac{1}{8}$ sec.	18	32 sec.
$3\frac{1}{2}$	1-660th	11	$\frac{1}{4}$	$18\frac{1}{2}$	45
4	1-500th	$11\frac{1}{2}$	$\frac{1}{3}$	19	1 min.
$4\frac{1}{2}$	1-330th	12	$\frac{1}{2}$	$19\frac{1}{2}$	$1\frac{1}{2}$
5	1-250th	$12\frac{1}{2}$	$\frac{3}{4}$	20	2
$5\frac{1}{2}$	1-170th	13	1	$20\frac{1}{2}$	3
6	1-120th	$13\frac{1}{2}$	$1\frac{1}{2}$	21	4
$6\frac{1}{2}$	1-80th	14	2	$21\frac{1}{2}$	6
7	1-60th	$14\frac{1}{2}$	3	22	8
$7\frac{1}{2}$	1-40th	15	4	$22\frac{1}{2}$	12
8	1-30th	$15\frac{1}{2}$	6	23	16
$8\frac{1}{2}$	1-20th	16	8	$23\frac{1}{2}$	24
9	1-16th	$16\frac{1}{2}$	12	24	30
$9\frac{1}{2}$	1-10th	17	16	$24\frac{1}{2}$	45
10	1-8th	$17\frac{1}{2}$	24	25	1 hour

We now conclude our preliminary notes. The best way of picking up this system of estimating exposures is to take a few ordinary examples, which will show how very simple the whole business is.

EXAMPLE I

March; 2—3 P.M.; bright sun, light clouds; plate, 200 H. and D.; stop, f 8; roadside cottages.

	Key No.
Table A, March, 2—3 P.M.....	1
B, bright sun and cloud.....	0
C, plate 200.....	1
D, stop f 8.....	2
E, foreground cottages.....	5
Total.....	9

Turning now to table X, opposite 9 we find exposure $\frac{1}{16}$ th second. This would be the minimum safe exposure for an average case. But suppose



"STUDY," BELL STUDIO, PENSACOLA, FLA. 1918 SALON PICTURE,
P. A. OF A. AT CLEVELAND, O.



"A DREAM OF SILENCE AND OF PEACE." H. C. MANN, NORFOLK, VA.
1916 SALON PICTURE. P. A. OF A AT CLEVELAND, O.

that the cottages are overshadowed by large trees in full leaf, we should then classify them as "Near buildings in shade," key number 6 instead of 5, thus bringing our total to 10, which Table X tells us requires $\frac{1}{8}$ th sec.

EXAMPLE II

March; 10—11 A. M.; cloudy, diffused light; plate, 300 H. and D.; stop f 6.3; harvest field; figures loading wagon.

	Key No.
Table A, March, 10—11 A. M.	$\frac{1}{2}$
B, cloudy	1
C, plate 300 (270)	$\frac{1}{2}$
D, stop f 6.3 (6.9)	$1\frac{1}{2}$
E, foreground figures	$5\frac{1}{2}$
Total	9

Table X gives key number 9 as exposure $\frac{1}{16}$ th sec. Now this happens to be just the same actual time of exposure as Example I. But note that all conditions in the two cases are different.

EXAMPLE III

October; 2—3 P. M.; cloudy, diffused light; plate, 300 H. and D.; stop, f 8; portrait in light room, light drapery, case i, or in ordinary room, dark drapery, case ii.

	Key No.	Key No.
Table A, October, 2—3 P. M.	2	2
B, cloudy	1	1
C, plate 300 (270)	$\frac{1}{2}$	$\frac{1}{2}$
D, stop f 8	2	2
E, portrait	light, 11	dark, $12\frac{1}{2}$
Total	$16\frac{1}{2}$	18

The corresponding exposures being 12 sec. and 32 sec. respectively.

EXAMPLE IV

November, 2—3 P. M., bright sun after rain, wet street, rapid plate 200 H. and D.; stop f 5.6.

	Key No.
Table A, November, 2—3 P. M.	3
B, bright sun	$\frac{1}{2}$
C, plate 200	1
D, stop f 5.6	1
E, wet street	$4\frac{1}{2}$
Total	10

Corresponding to 10 in Table X we have the exposure $\frac{1}{8}$ sec., which would probably be quick enough to capture slowly-walking figures not nearer than 25 yards from the camera.

EXAMPLE VI

November; noon; bright sun, no clouds; ortho. plate of 200, *with a four times color filter*; f 11; flower study in well-lit room, say 3 to 4 feet from large window.

We ignore the color filter for the moment, and take the key numbers from the tables, *viz.*, month and hour, $1\frac{1}{2}$; weather, $\frac{1}{2}$; stop f 11, 3; plate, 1; subject, 13. Total 19, *i.e.*, 1 minute exposure without the color screen, or 4 minutes with the color screen.—*Amateur Photographer and Photographic News.*

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

HOW TO ADD A SPECIAL INTEREST TO A LANDSCAPE.

THE first impression we receive when we make an excursion into the country is one of color and not of form or line, and this is the main trouble. We become interested in what our eyes perceive as a beautiful combination of values, but do not know how it will be recorded on the film or plate. It is never quite the same as we originally viewed it. The ability to think in black and white, and to translate color values into monochrome values can be learned only by experience, which includes many disappointments.

But while gaining this experience, there is one way in which to add a note of interest to a landscape composition that without it would look monotone and lack interest. It consists of finding and introducing some object which is more prominent than the others and that conveys a meaning. Take for instance "Summer." It is a good composition. The light forms of the sky and lake make an excellent space arrangement with the rest. But even if the tree-forms were more distinct, the pictorial scheme would be only ordinary and make no particular impression—without the boat. The boat saves the picture; our eye is attracted by it as soon as we glance at the print; it furnishes the brightest note in the tonality. But this is not all; a mere bright spot, a rock for instance, would not hold our interest for the same length of time. It takes a more, may we say, poetic subject. A boat pulled up on the shore conveys



"SUMMER"

DONALD C. FITTS

a vague expression of sentiment. While this is difficult to explain or analyze, there are certain things which impress us in that manner, and others, no matter how conspicuously brought out, that fail to do so.

The picture was made in July, about noon, with a view camera and a 9-inch Verito lens, $f4$. The swing back was utilized. The same technical conditions prevailed in the taking of "Autumn." 3 P. M. in August.

In this print we have three distinct planes—the sky, the trees and the foreground. As there is contrast, and the outline of the tree tops against the sky an interesting one, the composition, even without the introduction of the fence, could claim pictorial quality, but it would be a very unpretentious affair; it would depend largely on subtle gradations in the foreground to render it more interesting. It is, after all, the fence which lifts it from the commonplace; a half-broken down fence has the merit of being picturesque; its parallelism of lines is broken and it pleases the eye by its repetition of elongated shapes. To let the fence run diagonally into the distance is about the only way to handle it. An abundance of straight lines of a horizontal tendency rarely look well.

In this instance the diagonal sweep of lines not only relieves the monotony of the foreground, but is in perfect harmony with the darker form of the trees, which are second in importance. A bold diagonal line that cuts up the lower picture area into triangular sections nearly always produces a good result. It is dependent only on a sensitive discrimination of relative proportions.

Every landscape will gain by the introduction of some special point of interest, a concentration upon some object that is natural to the scene. It will produce a keener appreciation of facts, and transform even an ordinary record into something like a picture.



"AUTUMN"

DONALD C. FITTS

BEAUTIFYING THE PHOTO ALBUM— J. W. JOHNSTON

IT has been perfectly well known by professional photographers for many years that the appearance of a print or a mount might be greatly improved if a white line or a couple of lines were neatly drawn on or about the picture.

It has also been well known that a little ornamentation of some sort or other in keeping with the spirit of the picture added greatly to its interest.

Amateur photographers are recognizing this fact more and more, as has been proven by the interest which they have taken in a white marking fluid of unquestioned excellence recently placed on the market.

When we sit down and look over a book of amateur photographs, how interesting it is for us to see little notices under the pictures or a "snappy expression," which suggests to our mind the occasion on which the photograph was taken, or the spirit in which the work was created.

It is not necessary for one to be an artist to beautify a photo album. The first requisite is to appreciate the increased interest a book will have when an appropriate or significant border line is embodied. Of course, any pattern or book of suggestions showing effective designs is extremely helpful to stimulate one's imagination or to waken one's desire to make the collection of pictures not only attractive, but more educational to the friend or visitor looking over the volume.

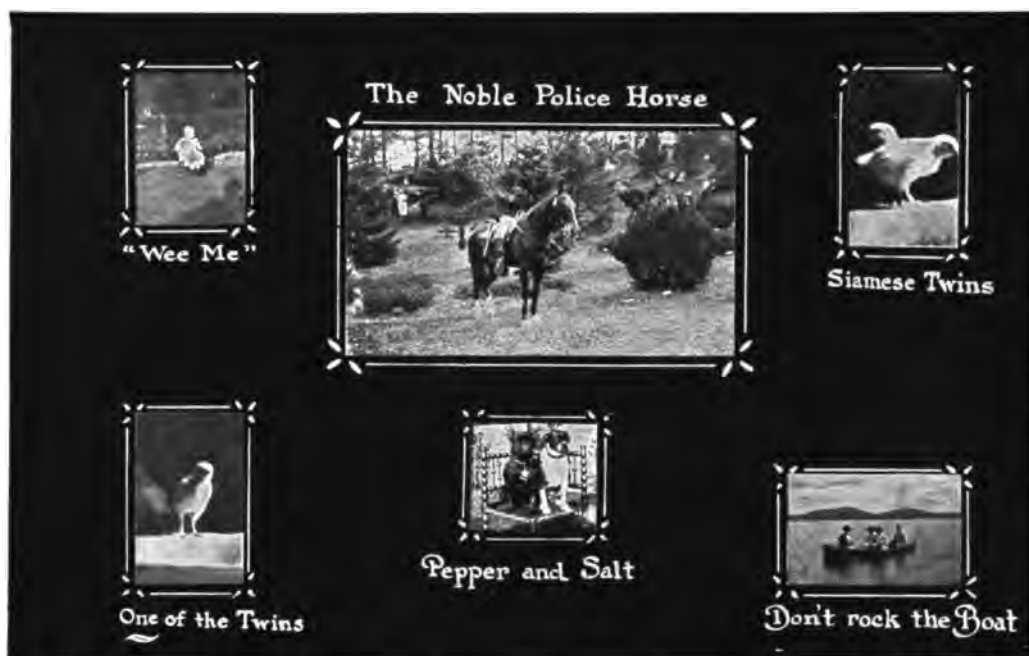
If you go on a vacation how helpful it is for the person seeing the pictures which you have made to note what the different scenes represent. This anyone may very easily do if the right material is at hand.

It is an extremely disagreeable matter to be working with some messy marking substance of unproven worth, and many a good photographic book has been ruined by the use of a white ink which rubbed or powdered off, or which discolored after work had been embodied with painstaking care.

The sample pages embodied with these lines will suggest ways whereby a page of pictures may be made of especial interest, nor should the amateur photographer lose sight of the fact that it is excellent fun and amusement during the fall and winter evenings to elaborate and to beautify pictures mounted in books.

It is certainly a satisfaction for us to be able to secure a real white marking fluid which will flow readily from a pen or from a brush, which will not rub off when dry, and which may be found serviceable at any time by simply adding a little water and stirring the material.

Thousands of amateur photographers will mark and beautify their albums this fall and winter. Are you going to mark *yours*?



SO EASY TO PLACE TITLES



A LITTLE BORDER SETS OFF THE PAGE

TALKS ON COMPOSITION—FIFTH PAPER SADAKICHI HARTMANN

THE DIAGONAL FOREGROUND LINE.

THE simplest devices are the most certain, if not the best. There is hardly a simpler device in landscape work than the diagonal foreground line. If rightly applied, and it is so easy to do so, it always produces a pleasing result, a reliable division of the picture area. It is as useful in the upright as in the oblong shape.

In the simpler forms of landscape composition the foreground is of the greatest importance. If the material is as frugal as in Fig. 1, just make a slight elevation with a large tree and the suggestion of some more trees in the distance, as almost everything depends on the shape of the foreground. A horizontal line, dividing the foreground and sky would be sterner in appearance; the rectangular idea generally is, unless modified by finer tonal values and the introduction of some minor shapes. But with nothing else than one line across the picture and a vertical tree-shape to place, the diagonal line is much more pleasing to the eye.

It makes a picture almost unbidden; only the slant is of special significance; it must be neither too steep nor too low, and the eye must glance along it without the slightest effort. In Fig. 1, it is about right for this particular size of picture. If we divide the height into about five equal parts, the starting point of the diagonal line on the left upright margin would be 7-8 inch, and the end of the line at the right side about 2½ inches.

In an upright composition (Fig. 2) the ratio is slightly different. In Fig. 1 the diagonal line is the result of the natural conditions of the scene, in Fig. 2 it is due to perspective foreshortening; but even if it were a hill, it could not run much higher or more upward than it does. If the height of the picture is divided into eight parts, the starting point on the left is as low as 1½ inches and the end of the line not higher than 3 inches. It is possible to ascertain these proportional relations with almost mathematical precision. Of course, in actual picture making, it is not necessary to be subservient to any special formula, and after a little experience, the eye will be the best guide. Still, the study of a few pictures from this view point would help considerably.

Of course, we realize that compositions on this order are not always as simple as in Figs. 1 and 2; the line is apt to become more disguised, as in Fig. 3, but the same principle applies. The figures, benches, electric light posts, and the division of space in the right lower corner did not interfere to make the diagonal line of the sea wall the main feature of the composition. The end of the line is obscured, and is placed at the ratio of about 1½ to 4½ inches (this being the height in parts). The peculiarity is that the diagonal line seems to be just as pronounced as in Fig. 1, although running much more horizontally. This is due to the threefold line of the sea wall and its contrast of light and shade, which makes it easier for the eye to appreciate it.



FIG. 1



FIG. 2

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.

FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher

Entered at Philadelphia Post Office as second-class matter.

Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents

TO OUR READERS

OUR magazine is intended to be of value to our readers; in a word, to be the practical medium for exchange of ideas, and therefore of interest to both subscriber and publisher. We want to know particularly what the amateur needs. We personally make the effort to supply the demand by furnishing the record of the experience of those who have overcome the impediments.

Our Criticism Department has been, we are glad to know, of the greatest value in instruction, as it brings us in contact with our readers, and it is just here that we need your help—to know what your troubles are—because it is difficult for us to put ourselves in the position of the novice in the art. We are apt to forget, in our advance, what difficulties you encounter, so do not hesitate to make known your wants, however trifling you may think them. We are here to help you, either in our columns or by personal letter.

Our overflow of illustrations this month prevents us printing the pictures given awards in the Beginners' and Monthly Competitions. We only publish the names of the prize winners, reserving the exhibition of the pictures for the November issue of THE CAMERA.



FIG. 3. (SEE PAGE 566)

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1416. *E. W. White.* — "Reflections." There is too much uniformity and regularity in the verticals of the trees and the repetition of the same in the water pro-



No. 1417. *Data.*—3A Premo; Planatograph lens; U. S. 16; July 3 P. M., clear light; 1-25th second exposure; M. Q. developer; Artura print.

duces a doubly unpleasant effect. Composition consists in associating diverse things to a pleasant relation, and as there is only monotony here you have not produced a picture.

1417. *O. W. Larson.*—"On the Heights." A very effective composition, and although the print is a trifle hard, the atmospheric effect is still secured by reason of the con-

siderable variation of the receding planes of the picture from the immediate definite foreground to the extreme distance and the fine and varied cloud prospect. The figure is admirably placed, just in the proper position, and is possessed of much action, and is graceful, pleasing and natural, and well expresses the motive of the picture.

1418. *A. Russell Mack.*—"Taking Comfort." Pose quite pleasing and natural and photographic quality excellent. The reproduction of the texture of the clothing shows considerable skill in development, and also good judgment in exposure.

1419. *R. W. Burke.*—"Portrait in the Shade." As far as the pose is concerned, your picture is quite pleasing. The little fellow has been caught just at the right moment. The lighting, however, is too flat; and though the conditions of exposure were cloudy, as you say, the light is still too intense. Either you should have shaded the figure, or waited until later in the day to make the exposure. You want to get some shadow in your picture.

1420. *A. Perkins.*—"The River." There is too much repetition of forms or masses of about equal value all over the view. The uninteresting foreground occupies too much space, and the straight bridge is not at all picturesque and adds nothing to the interest of the picture.



No. 1420. *Data.*—6½x8½ Premo; Zeiss Protar lens; U. S. 64; July 10 A. M., bright sunlight; 1 second exposure; pyro developer; soft Velox print.

1421. *James Stokley, Jr.* — "Winter Scene." As a composition your subject has considerable merit and the materials are well managed to give a rather novel presentation, but there is much room for improvement in the photography. We appreciate that the character of the lighting tends to give harshness of effect and loss of gradation, but by judicious development you would have considerably lessened the violent contrast and have added to the quality of the picture.

1422. *James Slater.*—"At the Window." The figure is quite interesting and the expression good. The position of the hand is somewhat awkward, and the part of the curtain to the right too vertical.

not to have them both on the same step. If the boy had been placed higher up, he would have hid the unpleasant line of the baluster, which seems to grow out of his shoulder, and the little girl should have been seated to give variety. Your general management of the architecture is very good, and it serves as a good background setting. The photographic quality is also good. Try this subject again, and with your good taste we predict an improvement.

1425. *Daisy* ———. — "Graduates." A good group, full of variety of expression, and considering the number of subjects treated, well arranged. It is interesting, because it is natural. The models are not posing, but enjoying the fun of the occa-



No. 1423. *Data.*—5x7 Empire State view; Cooke lens; f16; May 3 p. m., cloudy; flashlight; Metol-hydrochinone developer; Artura carbon black print.

1423. *John Eyerman, Jr.*—"Knitting." A good interior by flashlight, where the scheme of illumination is appropriate. The figure is well placed, and both the drapery and face value nicely secured. The general arrangement of the accessories is pleasing, but there is room for a little improvement in the disposal of the objects. The wicker chair, though well associated with the subject, is too large. A smaller object would make the balance better. The two large volumes of equal size on the table are too prominent. The picture needs some small object here, too. The photograph is first-class.

1424. *H. Enders.*—"Playmates." Not a bad child study, but it would have been better not to have posed the children and

sion. The lighting is good and the general photographic work excellent.

1426. *Clayton Wyatt.*—"The Bedtime Story." The composition is poor. The position of the figures is unnatural and constrained looking. The mother is not telling a story and the little girl is not listening; both are posing for the photograph. The lamp shade directly above the head suggests the descent of it. It has no visible means of support. The lighting is very bad indeed. The print is an unpleasant mass of black and white. The second of the same subject is somewhat better in lighting and expression of detail. The trouble with both is in the development. You should use a slow development for flash work.

1427. *E. Peterson.* — "October Moon." The subject not very suggestive of the title. There is little to indicate the fall of the year. As a composition it is not very successful; indeed, there is no attempt at composition. Nothing but an uninteresting foreground and a mass of undifferentiated dark foliage in violent contrast to the over-intense foreground.

1428. *C. R. MacCarrick.* — "Indoor Portrait." A good indoor portrait and also an excellent interior. The illumination is well considered and the accessories pleasing and appropriately arranged. The pose of the little model is easy and natural, and the rendering of both the flesh and drapery good. The whole effect is pleasing and the photographic quality excellent.

1429. *John Kalajian.* — "Child Study." The photograph is considerably under-timed, which destroys all half-tone and intermediate gradation of light and shade and makes the picture too contrasty and harsh. Such subjects, of course, do not admit of anything but brief exposure, but there would have been no register of movement with 1/4 second instead of 1/25.

1430. *Emery Dicke.* — "Smiling Flower." The general pose of the figure is good, but the hand is very awkwardly managed. The effect would have been better and the picture would exhibit better relief were the background less obtrusive. It is too definite and overloaded with monotonous detail. The figure is too close to it. An improvement, too, could be effected by cutting about half an inch from the top. The figure, as it is, is too low down, which somewhat dwarfs it and detracts from its dignity.

1431. *Jessie G. White.* — "Winter Landscape." Quite a pleasing winter scene, with good textural rendering of the snow and excellent treatment of the shadows. The contrast is kept down, so that the relation of dark and high-light is pleasingly presented. The photograph is properly timed and the negative properly developed,



No. 1425.—Data.—1A Junior Kodak; R. R. lens; f8; June 2 P. M., sunlight; 1-100th second exposure; tank developer; Cyko soft print.



No. 1428. Data.—5x7 Conley B. S.; B. & J. Ideal lens; f7.7; August 9 A. M., dull light; 15 seconds exposure; pyro-soda developer.

hence the agreeable shadows and soft highlights, and there is considerable atmospheric effect secured. Altogether a good piece of photographic work, having considerable pictorial value.

1432. *A. A. Heroux.* — "I'm Afraid." You should have included the whole of the bicycle. The clipping of its wheels at the corner destroys all idea of movement or progression. The rider should have been made smaller and placed more to the right and further back in the view. The print is a poor specimen of work.

1433. *John Long.* — "The Tree." The subject has some decorative value and presents quite a pleasing Japanese effect. One thing it demonstrates, that you have feeling for pictorial value; and had the composition in itself possessed more picturesque elements your treatment would have given us a very effective subject in the way of decoration.

1434. *Wm. C. Verburgt.* — "Late Afternoon." Fine pictorial effect and a most excellent composition. The masses are properly related and a good balance of the parts. The cloud effect is charming and we have genuine atmosphere, which carries the eye into the distance with nice perspective. The treatment of the water gives sentiment to the picture, and the reflections are soft and pleasing. The horizon line is properly taken, so as to give a

fine expanse of the beautiful cloud prospect. The two tall trees to the right are charming studies. A real painting-like effect, and excellent photography.

1435. *Bert Leach*.—"Bridge Over 'Big Black.'" If you will cut off to the left the mass of uninteresting foliage, just sufficient to allow the little glimpse of distance to show, you will materially improve the composition. Whatever is not essential detracts from the value of a picture. The scene is quite attractive in itself, but the improper development of the plate has neutralized its pleasing features and made a photograph of one monotonous tone in-

lines of the trees is most pleasing, but you should not have made the negative so dense. A softer development would have given us a rich, beautiful effect, but your picture is too hard and there is a loss of rich detail in high-lights and shadows, which all would have been yours had you evolved the image by a slower development; that is, with a weaker solution, more water in the developer and no bromide.

1438. *E. W. Smart*.—"The Pet Fawn." This is somewhat of a puzzle picture, "Find the Fawn," and exemplifies well the Darwinian natural law of protection by concealment. The fawn is projected



No. 1431. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Folding Brownie; R. R. lens; February 3 P. M., good light; bulb exposure.

stead of a variety of light and shade. The best exposure may be ruined by improper development.

1436. *M. S. Schammel*.—"The Bridge." The bridge is too much toward the center of the view. We think the effect would have been more pleasing had the camera been placed more to the right. It would have presented the bridge less horizontally, and also have enabled you to avoid the unpleasant straight line of the not very graceful tree trunk. The illumination might have been better. The scene is too uniform, and rather flat and destitute of half-tones.

1437. *Charles S. Kleisch*.—"Reflections." Your photograph is quite interesting pictorially. The variety of association of the

against a background of almost identical markings with those of the animal. The little creature would have formed a most pleasing subject had the composition been so managed as to intensify the characteristic features and had you selected a less intense illumination. The halation in the boy's shirt is very pronounced.

1439. *Irving S. Lovegrove*.—"Ramblers." There is little of interest in the subject. The contrast is violent and unpleasant; a mere mass of black and white. The photograph is much undertimed and overdeveloped, and the topic is the least considered.

1440. *George Williams*.—"The Brewery Fire." Quite an effective subject and good in composition. The various parts are



No. 1434. *Data.*—4x5 Goerz Tenax; Dagor lens; f6.8; June 6.45 P. M., 3 seconds exposure; Rytol tank developer; Royal Velox print.

properly balanced, and the contrast nicely managed, with considerable half-tone gradations. The spacing is also good and the photographic quality excellent. A well-handled piece of work.

1441. *C. F. Smith.*—"Chapel on the Hill." The architectural qualities are well brought out, but the illumination is a little too intense. A structure like this shows up the quality much better if taken on a

slightly overcast day. The contrast is then less intense and the general effect softer, and, what might not be supposed, the relief is better indicated. The brightness of the illumination has made the whole subject a little flat, and has not projected one mass against the other, so as to make the parts stand out as they should. The point of sight is well taken and the building shows up with considerable dignity.



No. 1440. *Data.*—3½x5½ Ansco Speedex; Ansco f6.3 lens; f11; July 1.30 P. M., bright light; 1-25th second exposure; pyro developer; Velox regular carbon print.



No. 1437. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Ansco No. 10 B; rapid symmetrical lens; U. S. 16; June 5 P. M., clear light; $\frac{1}{2}$ second exposure; pyro developer; E hard X Azo print.

1442. *H. J. Shipton*.—"Midst the Trees." The slight tilting in the large house is due to the photograph having been taken with the camera somewhat down-hill, and hence at a lower elevation and somewhat at an angle with the house. The smaller house came more directly in your line of view, and hence does not show the out-of-vertical. If you will place your photograph so as to look at the house from your left, you will notice that the vertical will look all right. The view is rather pleasing and the position of the houses in it is correct. The foreground is quite interesting.

1443. *H. E. Jeltsch*.—"Self Portrait." Of course, your personal interest in the result induced you to turn your face toward the camera, but the picture would have been more interesting and natural looking had you been more attentive to the instrument. We do not like an oval form for such a subject; a seated figure should never be put in an oval; it gives no base of support for the chair legs, suggesting the possibility of a tumble on the curved line; besides, it amputates the foot.

1444. *Verdi Burtch*.—"Mitre-wort." A good flower study, showing well the particular character of the plant and at the same time its pictorial quality.

1445. *H. P. Turrell*.—"Hayden Falls." An excellent reproduction of a waterfall. The movement of the water is well indicated and its transparent quality exhibited. It looks like water in motion.

1446. *Wm. Siems*.—"Train 24." The idea of movement is well suggested, and the curve of the track gives the impression that the train is progressing. The view is improved by cutting off an inch from the blurred foreground.

1447. *Arthur Sachs*.—"Outdoor Portrait." The whole subject is treated too hard and has too much contrast; too black and white and devoid of gradation. The figure looks too constrained in its limited space, and is seemingly plastered to the background. The character of the light under which the exposure was made is to blame for the intense hardness and violent contrast. Had more space been given and an exposure at a more suitable time of the day, the result would have been much more pleasing.



No. 1443. *Data*.—3A Special Kodak; Zeiss Tessar lens; $f/6.3$; February, fair light; $\frac{1}{2}$ second exposure; Rodinol developer; professional Cyko print.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

Since the infantile paralysis epidemic, almost all newspapers have contained views of the principal causes that contribute to the spreading of the disease.

The Universal Company went further. At an expense of \$4700 they produced a one-reel picture, "Fighting Infantile Paralysis," in co-operation with the New York City Board of Health. Some of the scenes were filmed under the supervision of an expert at the Rockefeller Institute. For other material the camera man worked with two Health Inspectors as far apart as South Brooklyn and the Bronx district of New York City. The Willard-Parker, Kingston Avenue, Seabreeze and Neurological Hospitals were also visited.

In the picture the affected territories were shown with scenes of uncovered garbage cans, near which children and cats play; fruit covered with fly-specks and touched by many hands before being finally eaten; dirty and narrow streets lined with unsanitary push carts, and illustrating how the street department takes care of the garbage and flushes the streets.

Scenes were filmed at the Neurological Institute for the purpose of showing the methods adopted by Dr. Kaplan in handling the disease.

Other vital features included the precautions taken by the Bureau of Infectious Diseases, the Quarantine officials and the United States Public Health Service. In this connection monkeys were experimented upon in order to ascertain how and what causes infantile paralysis to spread. Children were also shown leaving the city for country by boat and by rail.

Nor must the mention of the two maps be overlooked—one depicting the plague spots of New York City, and a larger one showing other affected parts of the country. The snappy sub-titles, presented in English, Italian and Jewish, of the "Don'ts" kind, were composed by Dr. O. M. Leiser, of the New York City Board of Health.

Fifteen positive copies were printed from the negative, so that the picture could be shown at New York's eight hundred motion-picture theaters; thirty-five prints are now going the rounds of the several thousand theaters from Maine to California.

The co-operation of an influential evening newspaper made it possible to reach an even larger audience. Several two-ton motor trucks, such as are employed for army transport work, were obtained and equipped for motion-picture exhibitions. The translucent screen, five feet wide by four feet deep, was placed at the rear end. The current for the projection machine, provided with a short focus lens, was supplied by two calcium tanks. Each motor truck contained a lecturer from the Board of Health, who discoursed while the picture was being shown to spectators.

There is such a thing as "atmosphere" that contributes materially to the enjoyment of a photoplay. It is not sufficient for this to be confined to the picture itself; you must feel it. Therefore, it is essential for the surroundings to be in complete harmony, the main factor of these being stage settings.

To S. L. Rothapfel, who introduced the innovation at the Strand Theater, New York City, belongs the credit for this advance in photoplay presentation. Perhaps his most successful production was an Italian pergola setting; at each side was a picturesque background, enclosed in a flower-entwined arch with white trellis work to match, and under each arch was a fountain operated by electricity. The screen, located in the middle, was covered with dark-green curtains, which parted noiselessly.

But the beauty of such a setting is enhanced considerably by color lighting effects. Instead of the lights being abruptly switched off, they disappear slowly in a gradual manner—not one by one. The curtain then moves aside, revealing the screen, which no longer seems flat, and which makes the color lighting effects even more attractive. Perhaps some portion of the play is improved by bathing the screen in a flood of color lighting—blue for twilight, orange for sunlight, red for fire and so forth.

After the last foot of the picture has been reeled off, the stage is lighted up gradually and brilliantly, and one is able to fully appreciate the artistic stage setting. This prepares us for some clever color lighting effects. One portion of the scenery is probably orange, to suggest the

full light of day; next a sunset glow appears in the sky, which changes to twilight, finally revealing a moonlight effect.

These stage settings are generally permanent. The Strand Theater, for instance, makes it a rule to change them twice a year, in order to catch the spirit of the principal seasons—Summer and Winter. Although it may not seem so, this is an advantage, since it allows substantial sets to be built in place of flimsy pieces of painted canvas. Both the scenic artist and lighting engineer are inspired to do their best when they know their sets remain in one place without the necessity of shifting from one scene to another.

Paramount has been putting out a series of "fillers" in connection with its "Better Babies" campaign. The pictures are shown at the regular theaters in the ordinary way, thereby reaching more people than if shown under special auspices. The latter phase of publicity has been by no means neglected, as the co-operation of the Children's Bureau of the Department of Labor at Washington, D. C., has been secured.

Dr. Roger Dennett, the famous infant specialist, furnished the material for the pictures. Each successive step is shown—bathing, feeding, dressing, measuring and weighing the baby. Then come the mental tests, and children are put through the senses of smell, touch, taste, sound and sight.

The motion picture is usually regarded as an indoor form of entertainment and instruction, yet it need not be debarred from the open-air school. In order to give motion-picture exhibitions in an indoor school, it is essential to set apart a room with safety first appliances, if the regulations regarding the same are to be complied with. With open-air exhibitions there are no such regulations, consequently the preliminary expenses are less and special space is not necessary.

The outdoor show has one disadvantage—that of light. Most of the screens on the market are only suitable for presenting pictures in semi-darkness, so the special type of daylight screen is advisable. It would be well to suggest, however, that more electricity is consumed in order to project a clear picture.

Even in these days of advanced production methods it is not uncommon for a director to imitate theatrical methods if he finds it impractical to despatch a band of players to the desired environment. Instead of an American company traveling to London, when it was necessary to introduce two of its noted landmarks, it preferred to erect portions of the Thames Embankment and Westminster Bridge in the studio from which to make a reproduction. Another company displayed great cleverness in reproducing Stonehenge

within the confines of New York City. Yet a further instance occurred in a picture of the Roman era. The heroine was supposed to journey to another country in a boat. The "craft" simply glided along on supports in the studio.

The motion picture is still regarded as a scientific toy by the daily press. New York City is supposed to set the pace for the entire country, yet what do we find? Of the regular dailies but one is making an honest attempt to criticise current photodrama attractions, and that only in its special motion-picture edition.

When a newspaper desires to review a photoplay it details its regular dramatic critic for that duty. He may be a competent man in his own particular sphere, but when he tackles the motion picture he betrays his ignorance. He will say, for instance, that "The Love Chief" was "produced" at the Blank Theater, whereas he should have written "presented." He is also fond of the word "pose" when speaking of the acting. As you know, once a photoplayer commences to pose he is artificial; a better word is "appeared."

The popularity of the feature photoplay and the resulting improvements affected in the producing end entitles the silent drama to be judged on a plane by itself. Why should a review be hidden among the "legitimate" stuff and criticised from the angle of a speaking play? It is not fair to the public or the producer. The newspapers claim that the average photoplay is not worth criticising—the story is too improbable to begin with. Let us grant their assumption is correct. What is the critic for? Is it not his duty to dissect the faults and show how they may be rectified? Very well. He should be pleased that there is some useful work ahead of him.

The producer has been accustomed to taking things easy because his efforts are sent out into the world without rebuffs. He may obtain a few "roasts" from the trade papers, but these do not reach the public at large, so why should he worry?

The motion-picture critic has difficulties which he alone can appreciate. There are about one hundred productions of all lengths and descriptions released weekly. To see the entire output would keep the critic more than busy during each of the seven days. Then there are space considerations. Under such conditions as exist in a big city, it would not be equitable to take the features playing at the leading theaters in the business and shopping sections, for then many ordinary shows situated in other parts of the town and suburbs would be entirely overlooked. The only fair way is a middle course. It will be taken for granted that the critic keeps in touch with the latest output, which

knowledge should greatly assist him to decide which are the best six or twelve productions of the week, and these should be included in his viewing schedule. This was the policy adopted by Wid Gunning when he was the motion-picture critic of the New York *Evening Mail*, and proved satisfactory in two ways. It prevented readers from seeing an indifferent picture and was an incentive to manufacturers to turn out better productions.

The duties of the small town motion-picture critic are considerably restricted. There are probably but two or three theaters in his territory, and all that is necessary is to review the star attraction of each house. If the theaters favor the daily change, as most do, it is impossible to review the features in time to be of service to the reader. For this reason, I am inclined to the opinion that the small town newspaper is best served by a syndicate.

From where will the successful photoplay critics come? Many will be recruited from the photoplay writings and photographic fields, because the first-hand experience thus acquired will have taught them the qualities which go to the making of the perfect photoplay.

Just as there has been a marked change in the American reading public during the past decade or more, as evidenced in the ever-increasing interest with which science and fact stories are received, so, too, the motion-picture screen reflects the constantly growing desire on the part of the better-class audience for films depicting actual things and happenings.

In the early days of the motion picture several French producers sent to this country film after film replete with scientific interest—animated histories of the lives of all species of the animal world, from the lowest to the highest; the making of various commodities from the raw material to the finished product; travel pictures showing the strange customs of peoples living in the farthestmost corners of the world; striking studies of plant life, and many other similar subjects. But these pioneer producers were ahead of their time, at least so far as America was concerned. The films were not well received by the audiences in this country, who preferred the then insipid story films.

A very different order of things prevails today in the realm of films. Within recent years, and particularly during the past twelve months, there has been an alteration in the discrimination of the audience. Scientific films, which would have met with anything but a cordial reception a short while ago, are now shown in most theaters, interspersed in the usual programs of comedy and drama pictures; and judging from the constantly increasing numbers of

scientific or fact films released, it is safe to assume that such films must have a strong appeal to motion-picture patrons today. In a great measure this sudden change of mind in the average audience is due to the fact that pictures are now appealing to a better and more cultured class of people than ever before. Yet more likely it is that the screen, too, is reflecting the tendency of modern Americans to drift away from fiction toward fact: we are fast becoming a scientific people.

Recent films have depicted, among other things, the many wonderful organisms that live in a drop of water, constantly struggling among themselves for their existence. What could be more interesting and startling than the microscopic hydra using its poisonous stings to paralyze its prey? Then, again, there have been films showing numerous new inventions and processes. The European war, with its wonders and tragedies, has been brought home to us on tens of thousands of feet of celluloid ribbon. Events which are making history throughout the world pass daily before our eyes in the theaters only a short time after they have occurred. And in marked contradistinction to these so-called "weekly" or "daily" films are the new "magazines-of-the-screen" films which discuss pictorially the vital questions of the day. In these there is to be found a veritable mine of information that is at once entertaining and highly instructive. Such films are truly scientific.

All this must be considered only as a beginning. As time goes on it would appear that more and more the general public will lean toward science, toward fact, and away from fiction, although the latter will, of course, always be appreciated in its proper place. We are coming to know in a small measure the many wonderful things that exist in everyday life—things which are ever so much more wonderful than the products of the writer's imagination.—*Scientific American*.

TRICKS OF THE TRADE

At every studio, methods of handling the camera differ, says Will M. Ritchey in the *Dramatic Mirror*. Directors, photographic experts and cameramen are constantly studying new ways of artistic "shooting." Some experiments become fixtures. Others are discarded.

Of trick photography there are almost as many examples as there are studios. There is in vogue at some studios now a method of filming a large scene without losing detail that may be adopted generally. This consists in mounting the camera and tripod upon a rubber-wheeled platform, and moving camera and operator about the scene. Thus, first a corner may be photographed; then the camera moves and more

of the scene enters the field of vision. Finally, the lens may point only to the chief character in the scene.

In this there is the advantage of holding the connection between the different parts of the scene without interruption. At present, however, there is a sense of mechanics which to some may destroy the illusion of the picture.

There is but one way in which the writer may become fully familiar with the possibilities of the camera—and this is by constant study of the newest pictures—features especially—exhibited. Having seen something done, he may write a similar action in his script. He need not know exactly how it is done, so long as he has learned when the method is possible and appropriate.

The "cut and flash" method of showing simultaneous action in two or more different localities is widely used—even to excess. In a magazine story or novel one chapter may tell the actions of the hero. The next chapter may reveal how his enemies are plotting against him. The third may swing back to the hero's adventures leading up to his encounter with the villain. So it is in the pictures, except that here the scenes are much shorter and the audience is not allowed to forget what one character is doing while following another.

The "cut and flash" is illustrated best by the "chase" scene. One person is seen hurrying along a street. The scene changes to another part of the street, with the same person running past. That is "cut" and his pursuer is shown passing through the first part of the street shown. Another "cut" and the pursued passes through a third street. This in turn is "cut" to the pursuer again, but now he is on the scene which shows the second part of the street.

A NOVEL METHOD OF ROLL FILM DEVELOPMENT

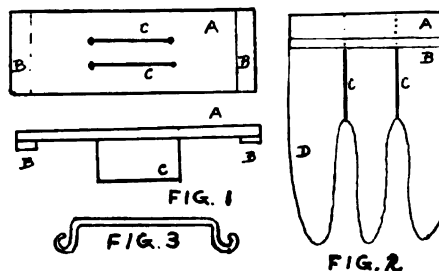
Numerous devices have been made to facilitate the treatment of uncut roll films in the developing and fixing baths. No doubt the best, as well as the simplest, is the method of the professional photographer, who hangs the film in a deep tank of developing fluid from a removable support at the top, a weight being attached to the lower end to keep the film straight. The support with the attached film is subsequently removed bodily to a similar tank for fixing, and finally to a third tank of running water for washing. While perfectly satisfactory as a wholesale method, the above process is unsuitable for the amateur with only a roll or two a week to develop, the tanks themselves being too expensive, apart from the question of space and cost of solution.

Unless a daylight developing tank is used, and this is an expensive item, most amateurs have recourse to the well-known method of

drawing the film backward and forward through the developing solution contained in a dish, repeating the operation for fixing and washing. This is at best a tedious and arm-trying process, even if the washing is curtailed by the use of a hypo eliminator.

The method described in the succeeding paragraphs is both simple and efficient, requiring no special apparatus and imposing no strain on one's patience.

Instead of a tank or dish a glass tumbler is used, sufficient developer being poured in to more than cover the roll of film when standing on end. The roll must be opened in the dark-room and the backing paper removed, together with the paper attached to the ends of the film. It should then be run through a dish of clean water two or three times until thoroughly wet. After this the film should be loosely rolled and dropped endwise into the glass of developer. A glass stirring rod—or a length of glass tube with the ends sealed in a glass flame—must be immediately inserted into the center of the roll and moved through the convolutions of the film with a



rather quick circular movement. This serves to insure an even distribution of the developer over the surface. The operation must be repeated at once, again after the lapse of a few seconds, then in twenty seconds, and afterward at half-minute, one-minute, and two-minute intervals. It is important, however, that the initial distribution of the developer should be made immediately upon the introduction of the film; otherwise unequal development, with all its attendant objections, will be likely to ensue.

The process being one of time development the roll will not need to be examined while development takes place. When this operation is complete the developer should be poured off and the glass filled with water. In order to thoroughly rinse the film throughout its entire length the rod should be passed between the layers a few times while under the water. Fixing may take place in the same glass, the hypo in contact with the film being renewed several times by passing the rod between the layers as described above.

The final washing may take place in the same or a different glass on the above lines, but the operation will be conducted more thoroughly as well as more rapidly if the following method is adopted:

Use a galvanized iron pail, or an earthenware pail if such is available, for the washing. Cut a piece of 5-inch or 6-inch plank to go over the top, as shown at A in the diagram, Fig. 1, and nail two strips of thin wood, B, along the ends, underneath, to prevent the cover slipping off. Midway between the ends pass two pieces of stout brass wire (C) through holes made for the purpose, each bent twice at right angles as shown. The middle, or horizontal portion, should be rather longer than the width of the film and should be about 3 inches from the plank. The appliance can be made in a few minutes from materials to be found in the lumber room, and once made will last for a very long while. Pin one end of the strip of film to the plank, exposed side outward, and festoon the film as shown at (D) Fig. 2. (The other letters in Fig. 2 refer to the same parts as in Fig. 1.) After passing the film over the two brass wire supports pin the end securely to the other side of the plank and immerse in a pail filled with water. This may be stood beneath a very slowly running tap and left until the film is thoroughly washed. It is advisable to keep the pail for this purpose alone, when it becomes a simple matter to take advantage of the density of hypo—which falls to the bottom of the vessel—and allow the water to run away from beneath. Simply punch a very small hole in the bottom of the pail so that the water will run out quite slowly. No elaborate adjustment of inflow and outflow is required, because if the water is running faster from the tap than from the hole in the pail, the latter will be kept quite full and any surplus water will escape over the side.

In order to keep the film in proper shape it will be necessary to attach a small weight—only just sufficient for the purpose—at the lowest points of the festoons. Suitable weights can be made by bending a few inches of thick brass wire, as shown in Fig. 3, and dropping over the film before lowering into the water.

WASHING ENLARGEMENTS

Those who, like myself, indulge occasionally in the production of an extra large picture may find the appliance which I sketch herewith of service for washing it. It consists of a board, which may be quite a rough one, one side of which is covered with a piece of oilcloth. Along one end of the board is a length of composition pipe with one end closed up. In the pipe I made a series of small holes, so that when the board is stood on end, an enlargement pinned on it, and the pipe is connected up with the tap, the jets of water make a stream covering the whole surface of the enlargement. I generally give five minutes' washing to the front of the enlargement, then five minutes to the back, and then a quarter of an hour to the front, at the end of which time it may be taken to be free from hypo.—*Photography*.

Letters to the Editor

Dear Sir:—I note the letter of Mr. N. R. Piper in your issue for September, and am very glad to see it, for every word finds its echo in my thoughts. For months past I have looked almost in vain for a prize picture that I would look at a second time, except as a prize puzzle to see why it was awarded a prize.

If you and your judges are going to give prizes for such pictures, can you not, at least, educate us by giving a full and complete reason for the award, and further tell us why pictures out of focus and generally impossible to find detail are best?

We can understand why pictures having soft outlines instead of very hard ones are liked, but when they get to the "fuzzy" type we are puzzled for fair.

HENRY D. JACKSON.

Dear Sir:—If you will permit, I would like to make reply to Mr. Piper, after reading his letter in the September number of *THE CAMERA*. He finds fault in the prize-winning print, "Dorothy," instead of "The Poor Belgian." He evidently has not made photography a study, being one of the 99 who is not able to put out a better print than the other fellow. His conception of a prize-winner is needle-sharpness. Sharpness is desirable in some prints, but not in portraits. I sympathize with him; I was like him once myself. Mr. Piper finds fault with the prize given in this instance. If he will study the prize winners at the various exhibitions and through other magazines, he will find the winners are along the lines of "Dorothy." I would suggest to our worthy brother-tyro that he join some camera club, if possible to do so. It will be a schooling well worth while, and if he is open to conviction he will slowly, but surely become of the despised 1 per cent.

E. J. BROWN.

Dear Sir: Looking through *THE CAMERA* for September, I read the letter of N. R. Piper, and I wish you would print this reply.

It is my opinion that Mr. Piper does not really know what he is talking about, although in one or two points he is right. He is judging the picture of "Dorothy" from the illustration in the magazine, whereas if he had seen the original picture, which is an 11x14, he would soon change his mind. The picture of "Dorothy" was hung in the Wanamaker Exhibit, the Yonkers Camera Salon, the Capital Camera Club, of Washington, D. C., and also at the Cleveland Exhibit; so whoever judged the print in *THE CAMERA* Competition for June must have made the same mistake

that all the judges did at these various exhibits. I did not enter this picture in THE CAMERA Competition under the name of "Dorothy"; I simply called it "A Study in Lighting." The name must have been printed by mistake. Anyone can look up these various exhibits I have mentioned and they will find my prints were hung as indicated.

Now he compares "Dorothy" with Mr. Nelson's "Belgian Girl," which is dead wrong, as they are two different photographs altogether. Mine is a lighting that not everyone can make; but the "Belgian Girl," while a great picture, is simply a pose outside. He also wishes to know if there is any reason for this "pretended admiration of the fuzzy." Let him ask the greatest artists in the country what they get the best money for; the sharp pictures, or the soft, fuzzy kind. I agree with him in this point, that the greatest number of people do not know an artistic picture when they see it, but pretend that they do; but the true lover of art knows a good piece of work at once and will also pay for it. It is nothing to get fifty to a hundred dollars for this "poor, dough-face, fuzzy stuff," as he styles it. In fact, in Butte City, Montana, I got from five to ten dollars a print for this "poor stuff."

The best photographers of Philadelphia, Boston, New York and Chicago all make this "fuzzy" stuff, and I ask Mr. Piper to look at several prints that these people make and not to judge from cuts. Also, I would like to see some samples of his work to learn whether he can make some of this "easy fuzzy stuff." It may interest him to know that last year I sent two prints to the Ansco "Loveliest Woman Contest," to be shown at the Panama Exhibit. Both of these were "soft, fuzzy" pictures, and for one I received one hundred dollars and for the other fifty dollars. Harrison Fisher, Mrs. Fiske, the actress, and Alfred Stieglitz, the art critic, were the judges. This goes to show there must be something in this "fuzzy stuff."

Now he also should know that many lens companies make lenses for this soft artistic stuff. In fact, there are several companies that make this one lens only.

To the general class, this fuzzy work may not appeal, for the reason that small pictures are desired and such as are fuzzy cannot be made small and look well. The smallest size advisable is 8x10, and from that up to 11x14. It is my private opinion that Mr. Piper would not know how to criticise a picture, because he gives no evidence of his capability.

Will you advise him that I wanted to withdraw this picture from the contest? I did not know at the time that this contest was for amateurs only. I have not sent any pictures since, but will soon send several fuzzy prints to be published, that is,

if you can find space in THE CAMERA for them. I then would like to have the readers of THE CAMERA judge and criticise this fuzzy work for themselves.

I am answering Mr. Piper's letter for the reason that I do not wish him to lead the readers of this magazine to believe there is no beauty in this fuzzy stuff. Like him, I once thought it was punk, poor stuff and the kind that anyone could make; all you had to do was to throw the lens a little out of focus or rack the camera. But don't be deceived, it will not work at all. I tried it and other devices before I made good work. I went to exhibits and viewed this fuzzy stuff and talked with the makers of it, and from them got the points that started me on the right road. I have seen much of Mr. Nelson's work that Mr. Piper mentions, and Mr. Nelson is an artist of skill. He won first prize in 1915 at the International Convention of Photographic Arts and Industries, held in New York. He won this with a picture of a Dutch girl. In the same contest I won fourth prize with a picture of a Gypsy girl, a fuzzy picture. That was published in THE CAMERA of 1912, while I was in Montana. This year at the International Art Exhibit, held at Cleveland, Ohio, Mr. Nelson won first prize again. This was won with a picture of a little Dutch girl blowing soap bubbles. Now this goes to show that Mr. Nelson studies Dutch life and composes his work beforehand, and this type of picture appeals to him. In fact, he excels in this kind of work, but he does studio work in a different way entirely. I know this, as I have been in his home city several times.

There are some fuzzy pictures published that are too extreme. This I will admit. And there are a lot of sharp pictures published that would look better fuzzy; in fact, better if not printed at all.

I trust Mr. Piper will not take offense at this letter, but I do wish he would go to some good exhibit and have some good art man with him, and then he may find out some good points about pictorial work and the beauty of it. Pictures must be seen to be appreciated.

E. R. TRABOLD.

AWARDS IN OUR AUGUST COMPETITIONS

MONTHLY COMPETITION

First prize, Lawrence Baker, Marietta, Ohio; second prize, Kenneth D. Smith, West New Brighton, N. Y.; third prize, Fred E. Crum, Spring Valley, N. Y.

BEGINNERS' COMPETITION

First prize, Anson Herrick, San Francisco, Cal.; second prize, D. A. Timmons, Paterson, N. J.; third prize, Norman R. Coulter, San Francisco, Cal.

FIFTH INTERNATIONAL PHOTOGRAPHIC SALON

The California Camera Club will hold its Fifth Annual Photographic Salon, the first since the great fire of 1906, in the galleries of the Palace Hotel, San Francisco, November 25th to December 2d inclusive, 1916.

It is the aim of the Salon to exhibit only such pictures as measure up to the highest standards of artistic expression and show mastery in execution. All work submitted to the Jury of Selection, composed of leading artists, will be judged according to these standards.

All correspondence and requests for entry blanks should be directed to the secretary, California Camera Club, 833 Market Street, San Francisco, Cal.

THE CAMERA IN WAR

Nowhere has the camera man proved himself so essential as in aeroplane scouting. From his vantage point, often directly above the enemy, little remains concealed. His camera looks into the fortifications and trenches, he spies upon the position of the troops and locates concealed batteries. Such photographs keep a commander informed of the exact position of his own and the enemies' troops, outposts and cavalry along the entire battle line, thus preventing unexpected blows, and practically eliminating the element of surprise, heretofore of great importance.

As a rule the photographer who goes aloft in the aeroplane service is a volunteer, for the work is extra-hazardous. In the German army the age limit is fixed at 28 years. The percentage of loss of life in ordinary aeroplane scouting is very large. Even when flying under the most favorable conditions, accidents are alarmingly common and a fall is usually fatal. The camera man in the aeroplane, in order to get his focus, must usually work within range of the firing lines. Few precautions are possible. The bottom of the aeroplane may be covered with metal sheets, when it is said to be armored, but the pilot must depend upon his fleetness and elevation to dodge the enemies' fire. There is, besides, the chance of encountering another aerial craft, probably armed for an attack with a machine-gun. Calmly facing such dangers the camera man must coolly adjust his camera, calculate the value of light and shadow, the speed of his craft, its altitude, and make his exposures at just the right instant. The photographer who loads his plate-holders and, camera in hand, takes his place on a scouting aeroplane faces perhaps a greater hazard than any man of his profession, which is saying a great deal.—*St. Nicholas.*

PROPER PRINTING MEDIUM

There are processes enough and formulae galore, and our photographic magazines and instruction books are replete with good advice how best to translate in positive terms the good points of the negative, but all to no purpose unless the photographer possesses the taste and judgment to select the best possible medium to exploit his good negative characteristics.

The day of cheap work is fortunately passing, and only excellency is commanding attention. The mediums are many and excellent, too, but whatever process is employed that process should be conscientiously carried to perfection. The greatest abuse of the printing or positive process seems to be in the manipulation of the P. O. P. or printing-out papers.

We have seen some delightful examples upon the high grades of this kind of paper, as beautiful and rich in tone as the best work in platinum or bromide, but these examples were made by painstaking artists in printing, and they exhibited all the fine quality of the negative. The trouble with users of P. O. P. is that they look upon it as a cheap and ready method of reproduction, which admits of careless handling with a modicum of good results. Let them treat it as it merits, and they will be rewarded with something worth all the pains taken to secure results.

AMERICAN CHEMICAL INDUSTRY

The war has had a great influence on all branches of American chemical industry. The benzol production has been increased five times and before long will be increased eight times. Carbolic acid is being made by several firms. The production of naphthalene has increased about three times and before long will meet the total American demand. The annual production of aniline is now about ten thousand tons and there are already twenty manufacturers, with others entering the field. Potash is being produced in the West. Barium is being mined and converted into barium products in the country. Immense quantities of mineral acids have been produced, four tons a day of nitric being made electrically in North Carolina. The production of ammonium sulphate has been stimulated, most of it coming as a by-product from the coke oven. There is now a great shortage of caustic soda owing to the demand, but the production has risen considerably. The glass industry has been much stimulated, exports having trebled since 1915. The manufacture of carbon tetrachloride has increased, and it is probable that before long it will be made by chlorinating natural gas instead of from carbon bisulphide. The manufacture of oxalic acid has also been much developed. Over 90 per cent of the steel furnaces are in operation, and there is a great demand for ferromanganese and for tungsten concentrates.—*Chemical Engineering.*

SURFACE BRIGHTNESS

It is common knowledge that the sensitivity of the ordinary photographic plate to the various regions of the solar spectrum is not the same as that of the human eye. This fact has led some writers on the subject to conclude, without warrant, however, that a method of estimating the brightness, as it appears to the eye, must necessarily have a somewhat limited application to photography. It cannot, of course, be denied that monochromatic (i. e., highly colored) objects demand a special treatment, and this point has been dealt with in detail by Dr. Kenneth Mees. In extreme cases of this kind, however, it must be conceded that a method of timing exposure, based on some active registering device, would naturally be at fault.

The difficulty of dealing with colored objects is augmented by the circumstance that the quality of light yielded by the artificial illuminants differs from the light employed, as well as from daylight.

Although stress is often laid upon the difference in quality of the action upon the eye and the photographic plate, it would be more logical from a purely scientific point of view to be impressed with the surprising resemblance in the sensitive curves, considering the surprising range of variations represented in the spectra of most artificial illuminants.

There is one interesting feature in the solar energy curve worth consideration. The maximum appears to be located at almost exactly the same point as that of the normal curve of luminosity of the eye. Hence, the natural deduction is that the eye has in course of evolution adapted itself to the energy curve of sunlight, so as to utilize its radiations effectively. Had the maximum of the solar curve been in the blue or ultra violet, our eyes would have been differently sensitive.

VARIATION OF THE ACTION OF THE BROMIDE WITH DIFFERENT DEVELOPERS

Bromide of potassium is the most generally employed of the restraining agents used in controlling the action of the developer. The usual practice is to employ it indiscriminately, both as to the quantity injected in the developer, as well as regardless of its action upon any special developing agent. This is an unwise practice, for the bromide varies in the nature of its effects according to the developer with which it is associated.

Some developers are particularly sensitive to its influence. Iron-oxalate (ferrous oxalate), for instance, when employed in developing requires only a few drops of a 10 per cent. solution to four ounces of developer for over-exposures.

The quantity available for pyro-soda, or pyro-potash, is only slightly in excess to that necessary for ferrous oxalate. But if pyro-ammonia is used, it is necessary to considerably increase the proportions of bromide, inasmuch as a portion of that introduced acts as a preventative of fog, which is more liable to occur with pyro-ammonia than when soda or potash is the alkali used.

As much as 80 minims to four ounces is advised for pyro-ammonia. However, pyro-ammonia is now seldom used. Hydroquinone is less sensitive to the retarding action than pyro. Development may only be restrained by using comparatively large quantities, but with even prolonged use the results are not as satisfactory as when pyro and the iron developer are restrained with bromide. Hydroquinone is really a self-restrainer, for it not only develops slowly, but gives vigorous results, not on account of the bromide, but in consequence of its decomposition, the oxidation retarding the evolution of the image without tending to impair the vigor of the resulting negative.

With eikonogen and metol, notably the latter, bromide acts in the double capacity of preventing fog and also as a restrainer, but the retarding effect is less noticeable than with the other developing agents.

Very fully exposed plates can be held back by bromide, but over-exposure when metol or amidol is used is not so well controlled, even when the amount is in excess. The energy of the metol is not stayed. Here the alkaline citrates are more available.

SELECTIVE REDUCTION

R. E. Blake Smith recommends the following as a method of reduction when it is required to reduce the darker parts of the negative without affecting the lighter parts.

The negative is bleached in:

Bi-chromate of potash.....	65 grains
Sulphuric acid (strong).....	6 drams
Chloride sodium.....	1 ounce
Water.....	10 ounces

Take one part of above and four parts water. The negative is allowed to remain therein until the lighter portions are completely bleached, and the darker portions not so completely, these latter being left with an amount of unchanged silver in them corresponding with the degree of reduction desired. After washing, the plate is put in a reducing bath, which will not dissolve the silver chloride. For this purpose the acid permanganate reducer is used, after which and a further washing the negative is re-developed in:

Metol, Caltone or Fredol.....	15 grains
Sodium sulphite (gran.).....	25 grains
Sodium carbonate (gran.)..	120 grains
Water.....	5 ounces



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Volume Twenty

NOVEMBER 1916

Number Eleven

ENLARGING—FITTING THEORY TO PRACTICE—PART II—C. H. CLAUDY

WITH the simple principles of the enlarging lantern understood, the beginner is in a position to make his first enlargement intelligently. Obviously, the first thing to be decided upon is the size of the enlargement. For the beginner this is usually determined by the size of the available paper and trays and the size of the negative from which the enlargement is to be made. Probably the first experiment will be the making of an 8 x 10 enlargement from a negative 4 x 5 or less. Eight by ten paper is not too expensive to allow a number of experiments and gives pictures of attractive proportions.

We have to consider something else than the size of a negative. Its density has considerable effect on the character of the enlargement. Negatives which are too dense require an unduly long exposure, resulting in an extremely contrasty print. As a general rule that negative is best for enlarging which is known as "plucky" or "bright" rather than dense. It need not necessarily be strong. A negative which, when laid face down upon white paper, shows detail plainly in the shadows will usually make a good enlargement. Any negative which will make a first class solio or platinum print in a reasonably short time should make a good enlargement.

Next to be considered is the relative sharpness of a negative. Not its actual sharpness, because it is understood that only negatives which have plain detail are suitable for enlargement. The *relative* sharpness, however, or the degree of sharpness in the various planes in the picture, has a great influence upon the character of the finished enlargement. In other words, a negative made with a lens of large opening, particularly if the lens is of long focus, will be apt to have foreground in focus and background out of focus. A small degree of fuzziness in the background is often charming in a small picture, but when enlarged two or three diameters in the lantern it becomes objectionable. As a general rule and noting that there are exceptions, then,

that negative is best for enlarging which is sharp both in background and in foreground.

The color of the negative will influence the character of the print. A negative developed with an abundance of pyro and which is, therefore, yellow in color, may be much better than one developed with ortol or metol, which is a blue-black color. The yellow stain serves the same purpose as a rather thick deposit of silver and many negatives which appear too thin for enlarging are excellent for that purpose because of their pyro stain.

From this fact it is easy to deduce that some too thin negatives may be improved for enlarging purposes by backing with thin yellow film. The contrary also is true. A negative, which is too thick to enlarge easily is sometimes handled by making the enlargement with a blue light. This blue light can be obtained by a properly stained blue ground-glass or by the use of a blue bulb. Such are sold for photographic purposes by the makers of nitrogen Mazda lamps. They have the same effect in the enlarging lantern as the blue portrait light has in the professional studio, that is, they supply a superabundance of ultra violet and violet rays of light and a minimum of the yellow and red rays, and are, therefore, able to "cut through" a thick negative much more easily than ordinary light.

Having our thin, sharp and slightly yellow negative properly focused upon the screen we are confronted by the problem of exposure. How long shall we keep the cap off in order to allow the light projected through the lens and negative to affect the sensitive bromide paper?

The question cannot be settled by the printed word. It depends entirely upon conditions, the thickness of the negative, the brightness of the light, the degree of enlargement and several other factors. Each experimenter should undertake to settle the matter for himself, and to do so, at the minimum of trouble and expense, should proceed as follows:

Take a sheet of 8 x 10 enlarging paper and cut it into ten strips, each eight inches long and one inch wide. Put one of these strips catcornered across the enlarging easel in the space which will be occupied by the projected picture. Make an exposure of ten seconds. Develop this strip of paper immediately. Ordinary bromide paper commences to develop within ten or fifteen seconds after being submitted to the action of the developer and development is usually complete within two minutes, sometimes within one. This also depends on many factors, of which the temperature of the developer and its strength are the principal ones.

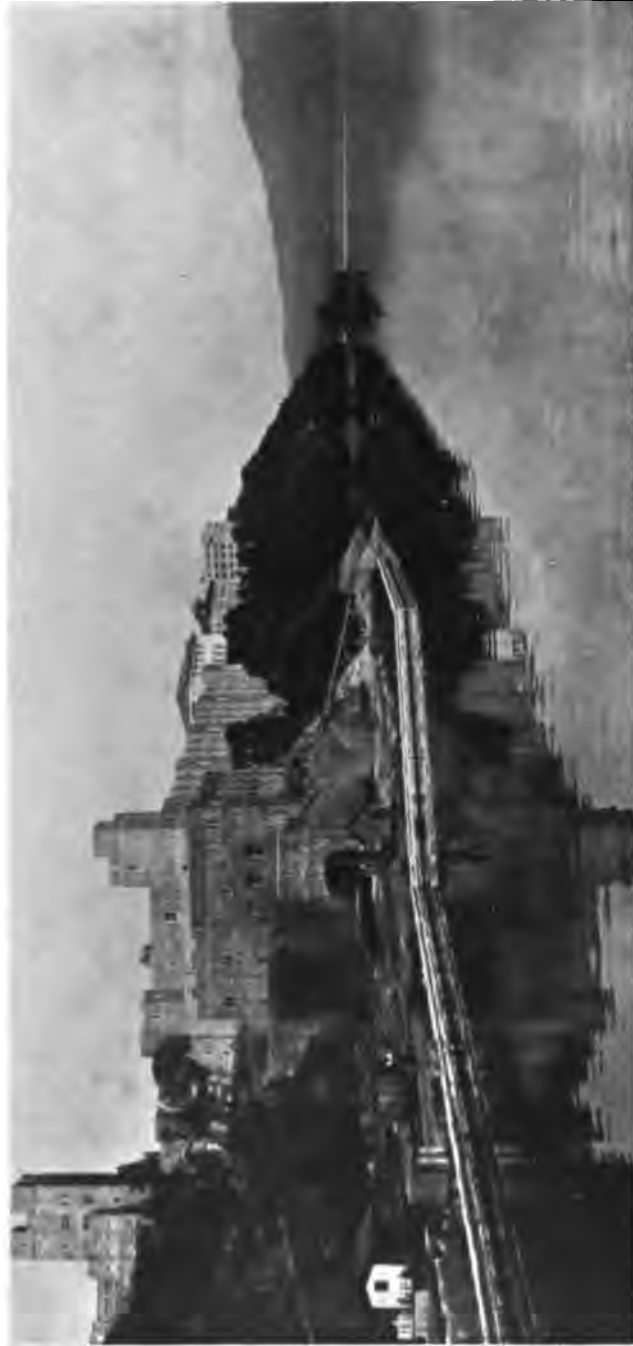
If the strip flashes up quickly in the developer you can throw it away immediately, knowing that your ten seconds' exposure is too great by several hundred per cent. If it requires from one-half to three-quarters of a minute for the image to make its appearance, if development proceeds very slowly and the resulting slip is a weak, washed-out looking gray, you can be sure that your exposure was too short.

By making successive exposures upon several of these one-inch strips, you will soon find out what the proper exposure is for the particular negative,



"I'M GOING FISHING." FIRST PRIZE IN THE CAMERA COMPETITION FOR AUGUST.
LAWRENCE BAKER, MARIETTA, OHIO

The spacing of the picture is well thought out. The figure is placed so as to give suggestion of forward movement, and the attitude is pleasing and natural. The expression is delightful, and the pose and management of the appropriate accessories contribute to the general pleasing effect. The landscape setting serves to give proper relief to the figure, and the detail is expressed sufficiently to emphasize the main motive, without being made too definite or pronounced.



"WEST POINT." SECOND PRIZE IN THE CAMERA COMPETITION FOR AUGUST.
KENNETH D. SMITH, WEST NEW BRIGHTON, N. Y.

Subject well considered and admirably treated, and the various parts so adjusted as to give proper balance to the view. The management of the architectural portion of the picture is most commendable. The point of view gives us all the picturesque features, and at the same time the textural quality of the structure. The reflections are fine and indicate the quality of the water. The glimpse of the distance adds to the other excellent features of this well-conceived composition.

the particular degree of enlargement, the particular kind of light and the character of paper with which you are working.

There is no necessity for making such tests for every exposure. Once get the "hang" of enlargement exposure and one learns by looking at the brightness of the image, approximately what the exposure will be. The latitude of most bromide paper is great, and one can under- or over-expose at least twenty or twenty-five per cent. without injuring the enlargement, at least according to the standards of most amateur operators.

Under-exposure and over-exposure, however, are no more to be desired in making enlargements than in making the original negative. The effect of under-exposure, as noted in the case of the test strip, is a weak, washed-out-appearing, gray print, which has no strength in the shadows and in which the weak high-lights are apt to be degraded by too long development. An over-exposed enlargement when taken from the developer before the high-lights have been degraded, nevertheless shows its over-exposure in a blocking up of the shadows and poor color.

A good bromide paper should give a steel black-and-white result nearly approximating that of first-class platinum paper, if properly exposed and developed. Over-exposure can be compensated to some extent by the use of bromide in the developer exactly as in the case of an over-exposed negative, but the result is an olive-greenish brown color which is anything but attractive.

There is no way to compensate for an under-exposure of bromide paper any more than there is in the case of an under-exposed plate. Intensification methods sometime improve plates but never bromide paper. An under-exposed bromide enlargement, which is first bleached and then re-developed, will show a sickly brown tone which is even less attractive than the original weak and washed-out black. If you are so unfortunate as to make under-exposed enlargements, the very best advice which can be given to you is to throw them away and make new ones, paying more attention to the exposure.

Because the negative is a "subject" all in one plane, there is no occasion to use diaphragms in the projection lens to increase depth of focus. Stops, however, have a use all their own in connection with the enlarging lantern. If you are making an enlargement of considerable size compared to that of the negative, the image on the screen is apt to be too dim to tell just when focus is at its point of greatest sharpness. Moreover, the greater the enlargement, the more latitude there is in movement of the screen back and forth without materially altering the sharpness of focus. Nevertheless, there is one point where the focus is sharpest, and if it is possible to get the screen at that point, the enlargement will be as sharp as it is possible to get. When this point cannot be accurately determined by the eye, use a small stop after focusing with a large one. This so increases the depth of focus of the lens that any slight imperfection in the final focusing itself is not noticeable in the result.

A second reason for the use of stops is to control the volume of light and thus permit the practice of the art of "dodging." It is frequently con-

venient to prolong exposure for at least thirty seconds. With a very thin negative from which an enlargement of but two diameters is desired, normal exposure with lens at full opening might well be only one or two seconds. Where no dodging is practiced, so short an exposure results in no inconvenience, but when it is necessary to alter the natural enlargement in any way, time is essential. This time is more easily secured by the use of a small stop than by cutting down the volume of light from the light source, for reasons which are obvious. A stop cuts the light by known portions; a stop of $f16$ lets through just one-fourth the light obtainable with a stop of $f8$. Cutting down the light at the source allows no such mathematical certainty.

Dodging an enlargement is accomplished by interrupting the light from lens to enlargement by the hand, or a piece of cardboard, so that one portion of the enlargement receives more exposure than another. It is similar to the dodging done in ordinary printing, with the exception that here one stands inside the camera and is able to dodge even small portions of the negative with the most extreme accuracy, by using a screen of cardboard in which is cut a small hole through which light can be allowed to fall upon any small portion of the enlargement. In this way it is possible to bring up detail in over-developed faces, or correct errors of exposure and development.

By utilizing the penumbra of shadow which falls beyond the edge of any obstruction to projected rays of light, it is possible to dodge without sharp lines showing in the print. The closer the shadow-making obstruction is to the lens and the further from the paper the greater this penumbra of shadow will be, and, therefore, the less likely it is to show. Expert enlargers become very skillful in the utilizing of the hand, figures, and straight and curved pieces of cardboard, one of the reasons why a professional enlargement is usually so much better than that of the amateur who never thinks to look into the possibilities of his apparatus.

Properly to dodge, indeed properly to utilize an enlarging lantern at all, it is necessary to understand its principles. These principles were set forth as simply as possible last month. In this paper an attempt has been made to show the easy way in which the few difficulties of enlarging are overcome. Those who will try these experiments, who will go slowly and learn one thing at a time, will find in the use of the enlarging lantern and its ability to produce large prints from small negatives one of the most fascinating and one of the most repaying branches in all the realm of photography.





"THE NOVICE." THE THIRD PRIZE IN THE CAMERA COMPETITION FOR AUGUST.
FRED E. CRUM, SPRING VALLEY, N. Y.

A most excellent child study; natural and pleasing, and possessed of much artistic merit. The action is good and the illumination all that could be desired. Particularly excellent is the treatment of the background setting and the accessories, which add to the effect by having the proper degree of suppression of detail, and at the same time interpreting the motive of the picture.



**"THE BEND OF THE RIVER." FIRST PRIZE IN THE BEGINNERS' COMPETITION
FOR AUGUST. ANSON HERRICK, SAN FRANCISCO, CAL.**

Composition excellent, with proper distribution of the parts and good spacing. The distance is shown, and the character of the mountain well brought out.

PRINTING-IN CLOUDS—WILLIAM S. DAVIS

AS every amateur knows, good cloud effects add much to the attractiveness of many photographs, but if one is not fortunate enough to secure them with the landscape the next best thing is to print-in clouds from a separate negative.

The first essential is, of course, to get a collection of cloud negatives—a dozen or so well selected examples affording sufficient variety to start with. Avoid startling or freak forms for combination printing, for the object is to overcome the feeling of emptiness in the blank sky-space of the picture in an unobtrusive manner, so, unless the sky is the main point of interest, it must be kept secondary to the principal feature of the landscape.

In good light, from spring to autumn, grey clouds, or those seen against the light, can be secured by simply using a small stop in the lens—say U. S. 32—and giving a snap-shot exposure of about 1-25 second. White clouds and blue sky are better rendered by placing a yellow ray-filter over the lens and allowing five times longer exposure. In winter, or for sunsets, the next larger stop should be used on account of the weaker light.

The negatives should be moderately thin and soft, but not flat or foggy. If they do not develop clear add a few drops of 10 per cent potassium bromide solution to the developer.

Having obtained some cloud negatives, the next point is how to use them. To aid in selecting the best combination keep prints of all the cloud negatives handy, and study them in connection with a proof of the landscape composition it is desired to fit clouds to. Obviously both foreground and clouds must be lighted from approximately the same direction, and the latter should also be in harmony with the general character of the landscape; a dark rugged foreground, for example, permitting the use of stronger tones in the sky than would be suitable with a delicate sunny bit of scenery.

There are a number of methods employed for combining a sky and landscape from different negatives, the choice depending to a great extent upon the printing-process used.

If a printing-out paper, such as Solio, is employed, the image is visible during printing, consequently all that is necessary in such a case is to make a mask of dark paper (an untuned proof is suitable by cutting apart along the sky-line of the subject. The sky of the landscape negative (if thin enough to print at all) is then shaded with the upper half of the mask while printing, keeping it moving a little to avoid showing a sharp line at the horizon, and when the foreground is strong enough the cloud negative is substituted in the desired position, using the lower part of the mask to protect the landscape portion. Success with this method is just a question of shading each half correctly while printing to avoid showing either a light or dark band along the sky-line. A few trials will prove the best guide.

To allow of greater freedom in locating the clouds in whatever portion of the sky desired, a size larger printing-frame is needed.

When "gaslight" or bromide papers are used, the difficulty lies in not being able to see what has been done until after development. However, if the sky-line of the landscape is of dark broken tone, such as masses of foliage, the foregoing method can be followed quite successfully if the location of the sky-line is noted by pencil marks on the back of print, so the cloud negative can be adjusted in proper position, and similar marks made on the face of the printing-frame as a guide in holding the masks. Before making the finished print, though, it will be necessary to expose test slips on foreground and clouds, as both must develop to the correct strength at the same time.

Another way, which the writer has found most useful for bromide, and similar papers, is as follows: First, procure a piece of thin glass the size of the print—an old negative from which the film has been removed answers well—expose and develop the foreground as usual, merely taking care to partly shade the sky, if thin; wash quickly in three or four changes of water to stop the action of the developer, and lay the print face down on the glass, squeegeeing into contact to remove any air bells. One now has an insulator, as it were, to protect the film of the cloud negative from the wet print, so the latter is laid in position and moved about until the clouds appear in the desired place, which can be quite easily seen by holding up to the dark-room light and looking through the back of the print. The second exposure is now made, bearing in mind that the wet paper is only about one-half as sensitive as when dry; then the print is soaked off the glass, laid face up in a tray and the developer *applied to the sky only* with a mop of absorbent cotton. By keeping the developer from the foreground portion it is not necessary to shade the latter while printing the clouds. After developing the sky the print is, of course, rinsed and fixed as usual.

The above treatment is well adapted to double printing upon enlargements.

For the benefit of workers familiar with lantern slide making there is still another method which may be briefly described. This consists in printing the clouds reversed upon a separate plate, clearing away any deposit below the sky-line of the subject with an ordinary hypo and ferricyanide reducer after the positive is developed and fixed; then, when washed and dried, this is used as a cover-glass for the landscape slide. From the combination so produced a new negative can be made of any size in a copying or enlarging camera, using a rather slow plate for the purpose. In this way the effect is preserved permanently, and for this reason it is the best method of all to employ when a number of duplicates are to be printed.

The illustrations accompanying indicate the improvement in pictorial quality which can frequently be secured by the "printing-in" of suitable cloud effects. In making the finished print (No. 2) the marine negative was first used, and the print developed; then a second exposure was made from the cloud negative and developed locally—as described. The closest examination fails to reveal any sign of double printing, although the print was not "worked up" by hand in any way after it came from the wash water



THE ORIGINAL PRINT

WILLIAM S. DAVIS



CLOUDS PRINTED IN

WILLIAM S. DAVIS



"SHIMMERING LIGHT." SECOND PRIZE IN THE BEGINNERS' COMPETITION FOR AUGUST. D. A. TIMMONS, PATERSON, N. J.

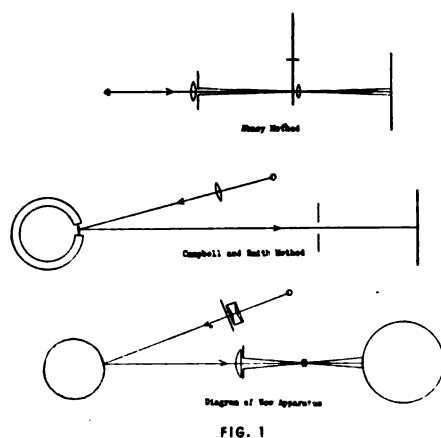
The effect of the peculiar illumination is good, and the horizon line placed so as to confer dignity by the extent of sky space presented. The composition is also well studied for effect, and the shimmer upon the water nicely indicated.

A PRECISION SHUTTER-TESTING INSTRUMENT—P. G. NUTTING, PH. D.

A GREAT number of instruments have been designed for the testing of photographic shutters, some of the instruments being intended to determine the total period during which the shutter is open, while in others an attempt is made to measure the effective area of the opening at different periods of the exposure. Most shutter factories use a simple tester of the first mentioned type, consisting essentially of a uniformly moving strip of film or plate. If, however, the beam of light projecting the shutter opening is interrupted at a high-known frequency, the area of the shutter opening may be accurately determined for every phase of its action, and thus the efficiency of the shutter can be calculated, the efficiency of the shutter being understood to be the relation between the amount of light admitted by the shutter during the exposure, and the amount which would be admitted if the lens were fully uncovered to its maximum aperture during the whole period throughout which the shutter uncovers any portion of the lens.

Of the instruments which have been used for the determination of the efficiency, the best known are those designed by Abney and by Campbell and Smith of the National Physical Laboratory.

In the Abney apparatus a beam of light from an arc is parallelized by a condenser, and against this is placed the lens with the shutter to be tested, a slit being placed over the shutter. Behind the shutter is placed a perforated rotating wheel, and the light, allowed to pass intermittently by the opening in the wheel, falls upon a rotating drum on which the sensitive film is placed (see Fig. 1). With this apparatus the diagram shown in Fig. 2 is obtained, this representing the opening of the shutter across the slit, the diagram given being for a roller blind shutter, which opens at one side of the slit and closes at the other. The duration of the exposure is given by the number of slit images shown, and these depend upon the speed of



the rotating disk, which is determined by blowing a stream of air from a tube against the perforations, the speed being calculated from the pitch of the note obtained. To obtain precise results at high speeds with the Abney apparatus it would be necessary to rotate the disk at a very high rate and to have the perforations small and widely separated. The effect that might be obtained with enormous speeds with an Abney tester may be obtained much more easily by rotating mirrors.



FIG. 2

Campbell and Smith photographed on a moving plate a narrow beam of light reflected from a mirror which was mounted on a vibration galvanometer so that it gave oscillations of known period, and the duration of exposure was read off from the number of oscillations shown on a falling plate. For obtaining the efficiency they used the same method as that of Abney, photographing a slit placed across the shutter upon a falling plate, but allowing the vibration galvanometer to make its record on the same plate at the same time, so that the record of the galvanometer is used as the time measuring apparatus in place of the syren used by Abney.

It is obvious that the best method of testing a photographic shutter would be to take a number of photographs of the shutter through its period of operation, the time of exposure of each photograph being small in comparison with the rate of movement of the shutter, and if these instantaneous photographs can be taken at known intervals, then we shall have all the data required for calculating both the efficiency and the duration of exposure of the shutter.

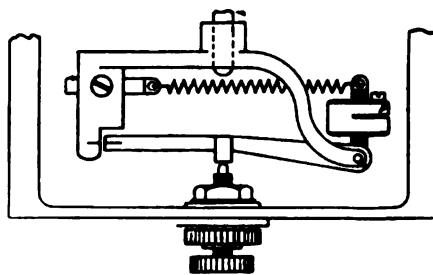


FIG. 4

In the apparatus described, the illuminating beam is reflected from a lightly mounted aluminum crown (Fig. 3) on which are placed twenty small plane mirrors held vertically on the face of the crown. This crown of mirrors is rotated at a very constant speed (50 r. p. s.) by means of a Leeds Northrup governed motor making twelve hundred revolutions per minute. The motor is governed by means of a centrifugal governor (Fig. 4), which makes and breaks the current, the system being simple and accurate in operation;

by attachment of a chronograph we have found the speed of the motor to be constant with 50 per cent variation in load or 5 per cent, in line voltage to within 1-10 per cent.

By suitable gearings we are able to rotate the crown at fifty revolutions a second, and in order to determine the speed the shaft carries a worm and single gear which can be thrown into mesh and the revolutions of the gear-wheel counted with a stop-watch. Since the crown carries twenty mirrors and rotates at fifty revolutions a second, we have a thousand interruptions of the beam per second, and this frequency does not vary by a thousandth part of itself. By increasing the number of mirrors from twenty to fifty and doubling their speed of rotation, it would be quite practicable to increase the frequency to five thousand a second, but we find a frequency of a thousand to be the most suitable for general testing.

The crown is illuminated by an arc lamp in a small projection lantern, the condenser of the lantern focusing an image of the arc crater at the mirror surface. The duration of each flash is determined by the angular width of the light beam at the lantern condenser, as since the beam at this point is limited by a vertical slide 2mm. wide, the width of the beam as it flashes by reflection past the shutter opening is about 1-30 of the distance between the flashes, so that each exposure is about 1-30,000 second. The reflected beam falls on a simple lens behind which the shutter to be tested is held in a universal iris holder, and an image of the shutter is then formed by a small camera lens of 90 mm. focal length on the rim of an aluminum wheel 12 inches in diameter, around which can be fastened a band of negative cinematograph film. This wheel can be set in rapid rotation by means of a crank and gearing, and all that is required is to start it going at sufficient speed to separate the different images of the shutter just before the shutter is snapped.

The wheel is enclosed in a light tight box so that the wheel and box can be readily lifted from the machine and taken to the dark-room for loading and development. Fig. 5 is a view of the assembled instrument with the case of the film wheel removed. The base-plate (of cast iron) is 13 inches by 40 inches.



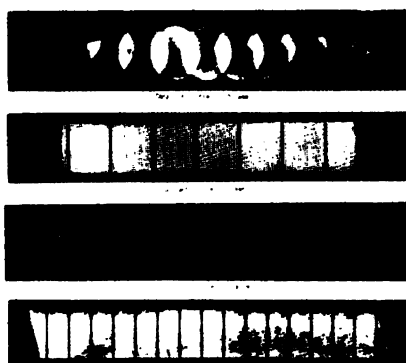
FIG. 5

Now, if we place a shutter in this instrument, set at about 1-100 second, and after starting the motor which drives the crown and shutter, check the speed to ensure that we have 1000 interruptions per second and release the shutter, then after development of the band of film we shall obtain the image shown in Fig. 6. Each of the separate images on this film represents a photograph of the shutter taken in 1-30,000 second. It will be seen that on release the shutter took 4-1000 second to open, thus remained open for 4-1000 second and finally closed in 3-1000 second, the total duration of the exposure nominally 1-100 second, being 11-1000, during which the shutter was fully open for nearly 5-1000.

By measuring the areas of the separate photographs by means of a planimeter and comparing them with the areas of the same number of photographs of the full aperture, we get the efficiency. Thus in the case given, the area of the measured photograph is 466, the area of one full aperture is 71, and therefore of eleven full apertures would be 781, and the efficiency would be $466/781$, which is 0.597.

The three feet of film can take only about fifty shutter images without serious overlapping, and in order to record shutter speeds of 1-10, 1-5 and 1-2 second the image is restricted to a narrow band by inserting a 1 mm. slit in the front of the box in which the moving film is enclosed. To save counting the hundreds of images obtained at these low shutter speeds, one of the twenty mirrors was painted black so that the shutter images are given in blocks of 20; thus, Fig. 7 shows the test of a 1-5 second exposure, showing 137 impressions of the image of the slit in blocks of 20.

Focal plane shutters can be measured by allowing the slit to pass in the same place as other shutters are mounted, when a series of images of the slit passing across the area of the lens opening are obtained. Then, if a straight line be drawn at right angles to the slit image the number of points at which this straight line is cut by the slit shows the extreme number of thousandths of a second during which the slit is passing across a given point on the plate. Thus, in the example shown (Fig. 8), the line is shown to



FIGS 6, 7, 8 AND 9

intersect eight slit images, showing that the total exposure is 8-1000 second at this setting of the shutter.

Fig. 9 shows a bulb exposure with a focal plane shutter, the slit opening across the plate in 12-1000 second, the plate being fully exposed for 320-1000 second, and then the slit closing again at the same rate as before, so that the actual time of exposure was nearly 1-3 second.

For visual observation the film wheel can be replaced by a four-sided mirror having a similar stem. The use of this mirror enables a general idea of the behavior of a shutter to be quickly determined.

It is hoped to present some results obtained by this instrument in a later paper.—*Communication from the Research Laboratory of the Eastman Kodak Company. in the Photographic Journal of America.*

MILITARY PHOTOGRAPHY IN MEXICO— C. TUCKER BECKETT, CORPORAL, U. S. ARMY

NOW that the world is at war, it might be interesting to inspect some of the problems involved in carrying a camera with a military column. I will tell you my own experience in Mexico. For years I have been doing commercial photography in the army, in San Francisco and Alaska (where I also did a supply business), and along the border at El Paso. At the latter place I finally put up a little studio. This experience covers a wide field and some knowledge of many kinds of cameras.

When the Columbus atrocity occurred, I bundled my entire studio into goods-boxes, stored them in a warehouse, put a 3-A special Kodak alongside my rifle, arranged for a tank developing outfit to be forwarded later, and was ready. Ever since the European War started, I have wondered why the expert (?) war photographers of the world, with the world's wonderful appliances at their command, have not caught the tense moments of battle, or the horror of horrors—the bayonet charge. Perhaps this would be my chance.

We detrained at night at Columbus and had marched a mile, when I became



C. TUCKER BECKETT

SAND STORMS CHASE ONE ANOTHER ALL DAY THROUGH CAMP



C. TUCKER BECKETT

WHEN THE ARMY IS GOING TO WAR YOU HAVE NO CONCERN, EXCEPT IN THE HEAVY DUTY

aware that something was amiss. Instinctively I clapped my hand to my side. The Kodak was left in the car. We were stumbling forward rapidly in the brush and I did not know how far we were to go. Behind, shouts could be heard of the men unloading the train so it could return to El Paso. I felt discouraged. Nothing could be said, for when the army is going to war you have no concerns except that of duty. A request for privileges would point out a camera as an encumbrance, and this must be avoided or matters could not be righted.

Having passed through Columbus, we suddenly halted and pitched camp. Hope sprang wide awake. Far back the electric headlight streamed weirdly over the desert. Around me every man was busy in the darkness. A man would not be missed for a few minutes. I ran like a chaparral. As I mounted the first car, the train began to move out. Every car was pitch dark, but I remembered the name of my car and so came at length to the very seat and, feeling along the window, there it hung.

Next morning everything was rush and expectancy. We were going into Mexico "light," which meant that nothing could be carried on the wagons



C. TUCKER BECKETT

CAMP SCENE, U. S. TROOPS IN MEXICO. IN IMMEDIATE FOREGROUND IS A PUP TENT BUILT OF ADOBE



"A SUMMER AFTERNOON." THE FIRST PRIZE IN THE CAMERA COMPETITION FOR SEPTEMBER. SUISAI ITOW, PORTLAND, ORE.

A study possessing much pictorial merit. Of most excellent composition and charming from its sentimental expression. The landscape has a painting-like quality and the figures are graceful and well placed. The effect of the contrasts of light and shade is original and most pleasing.



"JUST FEEDING A BEGGAR." THIRD PRIZE IN THE CAMERA COMPETITION FOR SEPTEMBER. H. B. RUDOLPH, SPRINGFIELD, O.

A well-managed group, with good composition. The expression of the children is perfectly natural. They are wholly interested in what they are doing, and even the squirrel plays his part well.



C. TUCKER BECKETT

16TH INFANTRY PASSING THROUGH CRISIS, MEXICO, JUNE 19, 1916. NORTHWARD BOUND
21-MILE HIKE UP FROM NAMIQUEPA

excepting the articles enumerated in orders, absolute military necessities. But the men themselves were going in "heavy marching order." There was a big chance that a man would be prohibited from weakening himself with additional luggage. The acute stage for this sort of thing is always at first, after an expedition is on the road it is governed more by the actual conditions of the march.

However, the next day we marched away at noon under the hottest sun you can picture, into a treeless desert of white alkali. I took a couple of snaps as we crossed the fateful line. There were dead horses all around where the 13th Cavalry struck the flank of Villa's raiders. The photographers and pressmen were drawn up in automobiles and gave us a cheer. I was ready to snap Villa should he appear over the rise ahead, but he did not come, and there was nothing else of interest until we pitched camp at the Palomas ranch, seven miles across the line. Here I finished up the first roll and sent it back, by our post, to El Paso.

There details are necessary, because I want you to see what happened. I carried my Kodak strapped under my arm. The extra rolls of film I carried in the top of my pack. The sunlight was terrific and there was practically no shade. The alkali dust was stifling and seemed to penetrate and stick to every-



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16TH INFANTRY PASSING THROUGH CRISIS, MEXICO, JUNE 19, 1916. NORTHWARD BOUND
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thing. The atmosphere was bone-dry, cracking the lips and the skin on face and hands. The heat drew the grease out of the bacon in my pack, so that it ran out like oil. I took care, however, that this did not touch the film. Generally, I laid the pack down, when the column rested, so that the film and camera would be on the under side, in the shade.

Our next hike was a scorcher. The regiment rose before sun-up and struck across a wild, waterless waste twenty-eight miles. No one, who made that march, will ever forget it. In the afternoon, when the blazing sun was hottest, and the white dust made men and animals unrecognizable, and every footstep seemed a separate martyrdom, I confess photography seemed rather unimportant to me, and I let my pack fall off at the stops any old way, and stretched out full length, deaf, dumb and blind to anything but rest. Men fell out at every hill, then at every mesquite, then at every malpais; they lined the road on either side; mules and horses appeared with feet in air and staring eyes. Mounted men and officers were carrying some part of some soldier's equipment. A mounted sergeant offered to take my rifle. I would not let him. He tried to take it. I would not let him have it. I knew I must get there with full equipment or it would all be blamed on the camera.

About four o'clock in the afternoon we struck the Boca Grande. There was a dark line of cottonwoods along the stream, and it looked like paradise. Soon as I had a cup of cold water, my mind turned instinctively to the camera. I got up, joint by joint, and essayed several snaps at the extraordinary groups drinking water and lying back in the grass along the water's edge. There was a queer tremble in my hands and knees; somehow I could not see the image



C. TUCKER BECKETT

A CARRYING CASE, OPENING ON THE FRONT EDGE, WOULD SAVE TROUBLE



"OPHELIA." SECOND PRIZE IN THE CAMERA COMPETITION FOR SEPTEMBER.
C. L. SNYDER, ALAMEDA, CAL.

Composition remarkably good. General pose and management of the figure pleasing and the lines of the subject properly associated. The masses of light and shadow are well contrasted, and the whole picture is pervaded with a soft, modulated range of gradation, which makes it a very effective piece of photographic work.



"A MADONNA OF TODAY." HONORABLE MENTION IN THE CAMERA COMPETITION FOR SEPTEMBER. C. L. SNYDER, ALAMEDA, CAL.

The study of the little child is amongst the most charming we have seen. It reminds one of the infants of Raphael. The expression is superb. The mother, unfortunately, detracts from the merit of the picture as a whole; her interest is more in the result than in the beautiful babe.

in the finder clearly, yet the finder was clean and the light was strong. I was afraid I could not hold the camera steady, or that the pupils of my eyes were so dilated from strain that I could not judge the light values. This confirmed my previous conviction that extreme fatigue, as well as intense excitement, call for a view-finder twice or thrice the size of the one in use by the leisure classes. However, I used the speed and stops that I had been accustomed to use every day at El Paso, having there the same climate and altitude. Then, as a last effort, I got four men sufficiently revived to stand breast to breast while I climbed upon their shoulders and made an extensive view of this remarkable and picturesque scene.

Many military pictures require a detailed foreground. The men in front must not hide the men behind. In order to get this, you must have an elevation. The height of the eyes is better than that of the waist, so there should be a direct view-finder as an auxiliary attachment. Winter before last I tried to get a folding ladder-tripod twelve feet high. The Rochester Optical Company pointed out that there were some such ladders made in London and Paris, not very satisfactory, and very kindly tried out a working model according to my plans, but decided it was not practicable, on account of vibration. It would have been worth a hundred and fifty dollars to me then, though, of course, I could not carry it to war.

Having rested here an hour, the march was resumed along the stream. Presently we passed a curious object in the grass. It looked like an old suit of underclothing stretched on boards, a scarecrow perhaps. But when alongside you could see that it was a man, stiff and stark, face jammed down hard in the



TAKING THE PLACE OF THE ARMY MULE

LUTHER B. HARPEL, LEBANON, PA

dirt. Villa's fleeing band had here murdered three ranchmen, and in a little while we met this man's friends searching for the body. Before I could get my camera set we had passed, and I was too dog-tired to fall out of column. Just at dark we pitched camp in the shadow of some awful mountains, and I sent back a couple of exposed rolls.

Even the best ready-made camera is not ready enough. Let's see how many movements it takes to get it going. 1. Draw it from the case. 2. Press the door catch. 3. Pull open the door. 4. Pull out the bellows. 5. Set the distance. 6. Set the stop. 7. Set the speed. 8. Open the finder hood. 9. (Generally) turn over the finder. 10. Cock the compound shutter. After pressing the cable, wind up the film. Could you photograph the units of a motor-truck train with this outfit? Then there is no use to think of the battlefield.

The hardest of all these things to do in a hurry is to get the distance set. There is a little catch on the distance scale of the best cameras, which helps, especially if kept set at 25 feet, the average distance. Then if the stop and speed are kept set according to sun and subject, you have probably eliminated two more movements, or three in all. But the dials must stay set and not slip around on society calls. Not being in society, you can also dispense with the finder hood—tear it off. Or, better still, while you are about it, get an enlarged finder, as previously indicated, one for the top of your shutter and one for the side, so you won't have to turn it over. (Then stick a direct view-finder on the side of the camera.) Thus two more movements are cut out. An automatic shutter will cut out another, leaving only four now to make. If the door



PENNSYLVANIA TROOPS ARRIVING AT MT. GRETN, PA.

LUTHER B. HARPEL, LEBANON, PA.



"SEE THE BIRDIE." THE FIRST PRIZE IN THE BEGINNERS' COMPETITION FOR SEPTEMBER. CARL L. OSWALD, WASHINGTON, D. C.

Composition is pleasing and the decorative effect particularly good. The distribution of the light and shade effective and the textural quality of the drapery and the flesh properly indicated. The lines of the figure study are graceful and well connected, and the general effect novel.



**"TAKE ME AND MY DOG." SECOND PRIZE IN THE BEGINNERS' COMPETITION FOR
SEPTEMBER. M. E. GANTS, NEWTON, IOWA**

A well-managed genre study, properly related to the background. The illumination is pleasing, bringing out well the expression of delight upon the face of the boy, and also the characteristics of his canine companion.

latch was on the door, you could pull it open when you unlatched it, saving yet another move.

Now all you have to do (in ordinary cases) would be to draw your camera from the case, pull down the door, pull out the bellows and fire away. Such a camera it is very easy to arrange. But if you are in deadly earnest, it would be still better if, when you pulled down the door, the bellows extended itself to the 25-foot catch, a large mill-head ready there to change it if required. And all the time you are watching your subject. After you shoot, the film rolls up automatically, reloading itself like a rifle. Your eye has never left the subject. Thus it is with the rifle—why not the camera? On the edges of empire, where tomorrow is in the making, there is no guaranteed security, and your camera, like your rifle, must not only be fool-proof, it must be nerve- and terror-proof. Many of the big events of life are unheralded, swift and full of shattering excitement. Surely nothing is more worthy of perpetuation than these fleeting moments bursting with action and death and life. The study of such pictures in days of quiet might give a little more insight into the book of mysteries.*

Day succeeded day, and every day at crack of dawn we were up and away. There was one other march that almost rivalled the Boca Grande, but we were more seasoned then and it did not hurt so bad. The nights were chill, thus you got no relief from your clothes, because in order to keep warm you had to dress up more at night than during the day. The entire 8th Brigade, for three months—except for an almost daily bath—lived in its clothes. What was happening to my film I was soon to discover.

Sometimes, on these desert marches, rare pictures presented themselves as the long line of men and animals labored onward—turns of the trail, rises of ground, fantastic cactus, long streamers of dust breaking for miles across the plains or around the craggy passes of the mountains. One such picture I saw coming, and thus had time to secure it. It has been published and republished ever since in the leading papers of the United States. But generally the prettiest pictures, most sparkling with life, present themselves suddenly and have to be caught in a breath or they fade or change. A man does not feel disposed to leap out of column, stare wildly around, struggle with bellows and stops, begin to press the bulb, only to discover the free, joyous life of the picture changed to very conscious posing. He has succeeded only in making a harlequin of himself.

A few days after we had established the base camp at Colonia Dublan, the mail began to arrive, and I got some prints and a letter saying my negatives were badly over-exposed. I knew my exposures were *not* too long, but the prints were certainly horrid, staring, lumpy things, with no gradation and almost no detail in the shadows. What on earth! I was savage. Then the censorship was put on the mail, and I had, indeed, to paddle my own canoe.

My company was sent out in the mountains to Colonia Juarez, near a railroad. The Mexicans kept an *administración de correos* there, so I inquired about mailing some film. But it seemed there had been a death in the family

* Such a camera is made by Herbert & Huesgen Co., New York City, called the "Aeroplane Camera." It is just being placed on the market.

of the *administrador de correos* and the place was closed. The pigeonholes were stuffed with letters and papers, but the place remained closed during the month we were there. Over the whole of northern Mexico the U. S. Army post was the only dependable carrier, and it was censored. When the army takes charge of a district, it can easily make communication difficult, and the most successful private endeavors will parallel the army's aims.

I continued to make exposures, but kept them. One day, Mr. Scowsen, a Mormon settler, went to El Paso, and very obligingly arranged to have my tank outfit sent out. I developed first the rolls first taken. They were black and the sky was smudgy. Then I developed the last roll taken the preceding day. It was perfect. At last I had a practical working solution. The film should be developed immediately after exposure, or the blistering heat will somehow continue the action of the light, and in a very clumsy way. This rule I have followed ever since, with results as sure as tit for tat. However, there are other considerations.

Excepting during the hours around sunrise, the water in the streams registers over 70 degrees. Only once, though, did I find it absolutely necessary



"THE FOREST RANGER." THIRD PRIZE IN THE BEGINNERS' COMPETITION FOR AUGUST. NORMAN R. COULTER, SAN FRANCISCO, CAL.

The horseman is treated in an artistic way and so as to give action to the picture. Both the horse and rider are properly placed in the view, and sufficient foreground is shown to suggest forward movement. The landscape setting of tall trees and variety of light and shadow add to the picture.



' TAKING LIFE EASY.' J. DONNELLY, RYE, N. Y. (CRITICISM.)

The general pose of the figure is easy and natural and along artistic lines. The motive is well carried out and the opposition of the lines of the picture well managed. The background setting gives good suggestion of atmosphere and nice relief.

to boil it. Also, it is rather surprising what an important part of your apparatus a house is. For instance, you are accustomed to think of the tank development as a daylight development. So it is—in the house. Under the blazing desert sun of northern Mexico there is a difference. From the first moment the sun peeps over the brass mountains, until its last flicker dies in the west, you will have to cover your film until fully fixed. If you crowd in under a blanket, poncho or pup tent, a dust spiral may snatch off the covering and fill your pan with dirt. But it will give you time to transfer the film from the tank to the hypo, if only now you had a covered box for the hypo, and you could sit and gently rock it until fixed. You look at the idle Kodak winding-box. Ah, if that were only divided in half and made of nicked metal, rounded corners, how serviceable it would now be for a fixing-box; and then it would supply two trays. Every article of your outfit should be capable of double duty, it is so difficult to carry anything at all.

One day at Namiquipa I found myself with five exposed rolls on hand, and the probability that we would pull out *pasado mañana*. The preceding day had been extraordinarily quiet for Namiquipa, which is the windiest spot on the Great Plateau, and so I expected a calm day for the work of development in the early morning. On the contrary, the wind began at sunrise to sweep the camp in yellow clouds. There were some vacant 'dobe houses down on the Rio San Marca where we got water. But I could not leave until after the dental inspection at nine o'clock. Then I carried my outfit down in a Standard Oil can, besides which vessel I had my aluminum mess cup and one flexible tray. The 'dobe room was a noisome place, swarming with green flies, but it offered protection from the sand storm howling past the open door. The river was still some distance down the hill, but I got a full can of water before it got too hot, and felt pretty lucky in the campaign to beat the desert.

The first film came out all right, and before it was fixed, I had another film in the tank. Every exposure showed up as planned. Then Jose, the Mexican peon next door, came in. He began to worry me a good deal with his Spanish and his dirty fingers. But I thought it was wise to humor him along, as I was away from camp and unarmed. A few days before, a squad of men had been out getting wood and two of them had been killed, and I realized that I should not have come out alone. Then I got worried about where to put my fixed film while I fixed the second one. I finally transferred the fixing bath to the mess cup and poured water on the fixed film in the rubber tray, fixing the second film in the cup. Then I reloaded the tank with the third film.

While I was shaking the film up and down in the cup, I heard an *hombre* dismount at the door, and expected to be bothered with Jose again. But when I looked up, my eyes met the sullen gaze of a Mexican *soldado* armed to the teeth. Glittering belts of cartridges across his shoulder, a pistol belted around his waist, enormous spurs on his boots, and a powered rifle on his saddle. As I looked, another appeared behind him. Soon, as my heart started beating again, I smiled broadly, trying to register friendship. They gave me not the

slightest notice, but turned and entered the house of Jose, next door. I went to the door and looked out. As I did so, I saw two other faces peeping around the corner of the house, while in the distance there was a file of several more on horseback. A bunch of our cavalry, drilling in the distance, never looked so good to me, and I went out to admire them. But it was time to take the other film out of the tank and there was no use stalling around. In a minute I looked out again and saw ten ponies picketed along the wall, but no *hombres*.

The film demanded my further attention, though, strange to say, my mind seemed to wander slightly. The storm still howled past the door. When I took the second film out of the cup, it had not been rocked for some time, and it was speckled with silver. The hypo in the cup was getting black. So I made up some fresh hypo and thereafter kept it in the rubber tray, which I emptied by hanging up the fixed film to dry without further washing. There was no water to spare, anyway. The fourth film was in the tank. It was almost noon.

They did not say a word when they came back rattling their great spurs. I caught up a film drying white with the unwashed hypo, wondering all the time what the dry hypo would do to it, and began showing them the exposures enthusiastically, at the same time racking my brains for all the Spanish I could muster: "*Buenos días, Señors. Mucho bueno retrato. Agradezco a V'd. su visita. Jamas se ha visto cosa igual, puedo asegurarselo a V'd.,*" etc., etc. Finally one of them smiled. It was like a ray of sunshine. Presently they were all smiling. But the leader, still scowling, called them out, and they mounted and rode down to the river. Under the opposite bank they dismounted in a bunch. Presently two of them rode on across the mesa, then two more followed at about four hundred yards, then the rest followed. They were gone. They may have been a party of *vaqueros* employed on the ranch. I thought they were, all the time. They may have been independent bandits, or *Carran-zistas* or *Villistas*. They may have been anything. But what got me was the military manner in which they approached and withdrew, as though prepared for trouble. Anyhow, it was a little trying on the attention.

As soon as I had the last film in the tank, I put all the other film into the water in the Standard Oil can, being afraid the hypo would blister them, and then presently went down to the river to wash them all. The sand storm swooped and howled and tore at me. I rolled each film up in the can and slipped it into the stream quickly and anchored it there. Then I remembered the water was too warm, and I saw that they were being beaten against the pebbly bottom. In a sort of dull despair, I lifted one up to see. The wind snatched it with sickening violence. So I turned and walked away and lay down in the sand.

After some twenty minutes I got up, rolled up each film, slipped it quickly into a fresh can of water and went back to the 'dobe. Tenderly I washed the slippery silt from each film and hung it up to dry. The fat flies swarmed on each one, their suckers often making minute holes. I thought about everything had happened that could happen. There were silver spangles from the alumi-

num and purple stains from the tin, and blisters from the warm water and abrasions from the rocks, and there was dust and fly specks. I hadn't the heart to look them over, so went out of the stinking place and lay down in the sand and wind. The camp butcher, on his way to the nearby slaughter-pen, saw me and called out: "Hey, you know they had small-pox in that house!" No, I didn't know it. "Well, they did." A pleasant recollection of that horrible den.

But the next day was big and beautiful, and, as very often happens, the damage was not so bad after all. The film has a way of healing itself if it can dry quietly. It's a lot of fun, anyhow, just to see if you can do it. All this summer, in the papers, no doubt you have been seeing pictures of Mexico. The next time you do, please remember that the men who do this sort of thing have to take lots of chances. Although you may live in the protected interior of our great country, you may lessen these chances lots, simply by striving for preparedness in the camera outfit.

The tank is the best development, because it avoids handling in heat and dirt, and it would rival hand-development in compactness if made as suggested. However, I have now obtained two of the flexible rubber trays, which just fit over the winding-box, and so take up very little additional room, and by working always at night, get along famously. Also, the water can be cooled with the desert water-bag. The only safe time to dry the film is during the quiet hours just after sun-up, before the dust storms start. Almost any photographer would sense these simple conditions at once, but the desert is as cunning as a mule and would certainly beguile him into a few equally simple, but none the less severe, mishaps. Be satisfied to abide by the simple demands of the desert.

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

THE PICTURESQUE VALUE OF TREE-TRUNKS

THE trunk of the average straight and full-grown tree, if regarded separate of environment, is not attractive in shape; it is either too bulky or too much of a straight line to be of much value pictorially; its real charm consists of a peculiarity of bark structure and accidental beauties of texture. These are rarely exploited in photography. Texture of this kind is more easily rendered in color than monochrome, but even in paintings, tree-trunks, as main objects of interest, always look a trifle clumsy and awkward. Of course, there are trees, like birches, beeches, apple and other fruit trees, old oak trees, etc., that lend themselves readily to pictorial treatment, but it is generally the entire tree-form with branches and foliage which produces the effect.

In the two accompanying prints, "Winter" and "Sunshine and Shadow," the tree-trunks furnish the mainstay of the composition. The first solves, with the help of the perspective, the rather difficult problem of symmetrical parallelism, the other, parallelism and repetition of forms with slight variations.

Whatever pictorial value there may be in tree-trunks, it can be brought out only when there is a sufficient quantity to permit a play and balance of similar forms.

"Winter" is a Verito enlargement of a film taken on a December morning with a 4 x 5 Graflex, and a 9-inch Verito lens, *f*8. It is the same old theme of an avenue of trees lost in the distance, which was so successfully handled by the Little Dutch Masters, and Hobbema in particular. The vanishing point of the four leading lines is almost in the center, and this makes it one of the most awkward schemes of composition. Everything depends on the shifting of the vanishing point just a trifle away from the center, so that the vanishing lines to the right run at a slightly different angle than those to the left, as exemplified in "Winter." The tree-forms, the foliage or branches, are the next important factor. Bare branches, as in this instance, are hardly sufficient to produce a pictorial effect. It remains a simple record that gains distinction only by the difficulty of the device and the enlargement, which softened outlines and detail.

The effect is vaguely decorative, and it is the decorative treatment which shows tree-trunks to the best advantage. But it must be attempted in a more



"WINTER"

DONALD C. FITTS

direct fashion, as in "Sunshine and Shadow." The tree-trunks are reduced in this print to mere elongated square shapes with blurred outlines; this blur is very important, as clearly-defined shapes of this kind would be simply intolerable. The four tree-trunks (Fig. 1 and Fig. 3), constitute the whole composition. If they are rightly placed the arrangement will be pleasing to the eye. The shadow of the larger tree-trunk and the triangular division of the background have something to do with the total effect, but are, after all, of minor importance in comparison with the four leading forms.

All decorative tonal treatments that are unsymmetrical deal with the harmonious arrangements of forms rather than of lines. Even contrast becomes more important than line. While in symmetrical arrangements the line feeling, even if as subdued in "Winter," is invariably the leading factor. The print is the product of a 3-A Graflex, 8¼-inch focal length, Zeiss-Kodak lens. January, 1 P. M.



"SUNSHINE AND SHADOW"

DONALD C. FITTS

PAPERS FOR BEGINNERS—CONTINUED

WE previously said something by way of explanation of curvature of field in a lens and the method for securing flatness of field. The old rectilinear lenses were corrected as far as possible under certain conditions when they were made with the ordinary crown and flint glass. When the Jena glass was discovered, the impediments of the rectilinear lens were almost entirely eliminated.

There is another aberration of the lens which gives the optician much trouble, because it is a serious one, and is called "astigmatism." It is a defect in the lens, by reason of which it is impossible to bring to a sharp focus, at one time, lines which run in different directions on a plane surface.

It is a defect prevalent in the ordinary human eye, and the cause why so many of us need spectacles for its correction. The oculist, when testing the eyes for this astigmatism, puts at a certain distance a chart representing a figure composed of lines like the spokes of a wheel. Now, to the affected vision, most of these lines look clear and distinct, but some appear blurred. In the same way, the defective lens, which is not corrected for this astigmatism, will show some portions of the chart more or less blurred. The blurred lines are out of focus, and may be made sharp on the ground-glass by racking the lens back and forth, but then some others, running in a different direction on the same part of the ground-glass, or in the same direction on a different portion, will look blurred. This undesirable presentation is due to the fact that the marginal portions of the lens do not bring to focus the images of radial and tangential lines.

The ordinary crown and flint glass partially overcame the defect, but it was at the expense of the rapidity of the lens.

In 1884 the Jena glass was introduced, made by Abbe and Schott. They not only produced a dense crown glass of high refractive power, but also a series of glasses of varied properties to meet the needs of opticians in overcoming astigmatism and to admit of the manufacture of a variety of lenses under the name of the "Anastigmat lens."

The lenses, prior to the discovery of the new optical glass, suffered to a degree from this astigmatism, and curvature of field, of which we have spoken and the means employed to minimize the inherent defects, caused too much loss of light, which necessarily implied increase of exposure. But it was not long before several enterprising manufacturers designed and put upon the market several varieties of objectives called "anastigmats" (without astigmatism), which is what the word means. These lenses are calculated by mathematical principles, and vary considerably in their special characteristics. All of them are vast improvements on the older types, but even the old types benefited by the discovery, so that there is a general improvement all around. One of the earliest was the "Protar," made by Zeiss, and another the Goerz lens. The chief feature of these modern lenses is in their fine definition with large aperture. That is, to get sharpness it is not necessary to stop down as in the old form, and the flatness of field enables one to get detail over a large area of plate.

But these new lenses, to insure results to the photographer, must be properly handled, and very often an indifferent use of them fails to effect even what an ordinary lens gives, and we hear frequently the remark made by the thoughtless photographer that he finds the old rectilinear preferable.

We shall, in our next paper, say something about the way to get the positive virtues of the anastigmat.



TALKS ON COMPOSITION—SIXTH PAPER SADAKICHI HARTMANN

LINE FEELING IN FIGURES

THE more line feeling there is in a composition the less skill can be exercised in the management of contrast and tone. Line is the most logical of pictorial expressions. A precise and beautiful line explains itself, and it is beautiful only when it is in true relationship with the conformity of all other parts of the composition, and the harmony and balance arising therefrom.

The beauty of line in photography depends either on structural perfection of the model or on the arrangement of drapery and costume. It easily leads to decorative treatment in which line plays a more important part perhaps than in other phases of composition. Reliable decorative composition is impossible without adequate line work. Fig. 1 is decorative in tendency. As you will notice the tones are flat and the general effect is due to spacing; but it is the profile which makes the picture. If the model does not possess the face which lends itself to such treatment and can be seen to good advantage in clear outline against a monotone background, it would be useless to attempt such a composition. Of course, there is also the face of the child and the folded hands of the mother. Still this only proves more clearly that when the line is supposed to please in photographic arrangements it must be beautiful in itself, as long as the figure is concerned. There is very little line feeling in the rest of the picture, which teaches the lesson that whenever you become conscious of an exquisite line, you can emphasize it by isolating it and by giving the rest of the picture a different treatment.

In Fig. 2 the line feeling is not so much in the face and hands, although they are beautifully drawn, but in the drapery. This is a matter of skillful arrangement. Angelica Kauffman, the painter of this well-known picture, no doubt thoroughly understood the fall and flow of drapery. Every little fold has been considered, and the dominating lines are natural, graceful and convincing. One of the principal merits of good drapery should be invariably that it explains itself; that it is not merely a jumble; but that there is a continuance in the flow and that every line can be traced to its origin.

Line in drapery, of course, has to be soft in effect. As soon as it is harsh it loses its greatest charm. But this is not the case in the human figure. It can be very precise if it be originally beautiful; but as nearly all models are defective, accentuation of certain parts is most desirable. In figure work one can work effectively only when the material warrants it.

Line work demands the most scrupulous care, as any error is more readily detected, even by the layman, than any shortcoming in lighting, proportion or tone. The securing of a good line is worthy of any effort, and is one of the best aids to the making of a good picture. The knowledge of line feeling depends on taste, momentary selection, and a knowledge of what is considered beautiful in that respect in the world of art.



FIG. 2



FIG. 1

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, PUBLISHER
Entered at Philadelphia Post Office as second-class matter.
Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.85. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

CONTINGENCIES OF DEVELOPMENT

THERE are so many variables in the problem of successful development that one wonders how the elementary books have the effrontery to represent the accomplishment as such a very simple thing. Surely there is no compromise of one's reputation in a candid avowal that one never undertakes the development of an important exposure without some mental deliberation as to the most effective means of getting desired results. We always keep in mind the saying of Dr. Vogel: That anyone may make the exposure, but he wants a man of talent to develop the plate.

I am tempted, therefore, to say that development is of greater influence in determining the good qualities of a negative than correct exposure, much as I appreciate the importance of exposure as a factor to success—inasmuch as a properly-timed plate may be spoiled by injudicious development, while an improperly-timed plate may be made to approximate a well-exposed one. True, this is something of a sophistication; but one thing is certain—no stereotyped formula can be laid down for successful development. Whatever good results are had by special methods, it is not in accordance with experience to say that the method pursued is applicable in all cases.

We unhesitatingly acknowledge the excellency of the results from pet formulæ, but we just as truly maintain that success is not due to the method but to the chanced proper relation of exposure to the development.

Photographers, after having constructed their studios and studied the best effects with the conditions of lighting, etc., under their control, having reduced things to a certain degree of uniformity, discover that with certain modes of development they get charming results, at once leap to the conclusion that their method of procedure is one to be recommended to the profession at large, irrespective of what conditions may prevail. The promulgators of the pet scheme fail to appreciate the fact that should they move their quarters, so as to change their environment, or should the character of the subjects they are accustomed to deal with vary, new methods of getting results must be sought out.

It is of paramount importance to know the character of the subject before the camera, indeed more so than the exact time of exposure. Yet how often are plates consigned to a commercial agent, or to a dark-room employee, without any data whatever. How are these (perhaps skilled developers, we admit) to know what is wanted in the negative to express character of the original?

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1448. *L. Thompson*.—"Tired." This is an excellent genre study and a good piece of composition, and good photography besides. A trifle more time would have



No. 1448. *Data*.—2C Kodak Jr.; anastigmat lens; $f7.7$; October 11.30 A. M., dull light; 1-25th second exposure; pyro-metol developer; Cyko contrast print.

given more half-tones and have made the whole picture richer in effect. However, your study is pleasing and gives evidence of good taste. We would rather dispense with the fancy framing. Such a good piece of work needs no extras.

1449. *E. G. Peck*.—"Peaceful Valley." A well selected composition taken from a favorable point of view to express pleasingly the character of the scene. The sentiment of peace and repose is well presented. The perspective is beautiful, and the eye is led directly into the picture, suggesting atmosphere and distance. The masses of light and shade are nicely dis-

tributed, and the whole composition is worthy of commendation.

1450. *E. Peterson*.—"Guardian of the Hillside." Your trees and the whole upper portion of the view are particularly pleasing and artistic, but the lower part is too commonplace and detracts much from the beauty of the scene. Would it not be possible to get such a charming tree subject, without including the fence and the monotonous road?

1451. *E. S. Ruedi*.—"The Evening Paper." The figure is quite expressive and interesting, but the accessories might have been better selected. They are too dark



No. 1450. *Data*.— $2\frac{1}{4} \times 3\frac{1}{4}$ No. 1 Pocket Kodak Jr.; Eastman $f7.7$ lens; $f22$; October 4 P. M., cloudy light; two seconds' exposure; Kodak tank developer; Azo hard print.



No. 1451. *Data*.— $3\frac{1}{4} \times 5\frac{1}{2}$ Speed Graphic; Ic Tessar lens; $f4.5$; 9 p. m., 500 Watt electric light two seconds' exposure; pyro tank developer; Azo print.

and heavy, and the high-light splotches are annoying. They are not self-interpretive and hide the portion of the picture which is necessary to give the composition the proper balance it lacks.

1452. *Wm. C. Verburgt*.—"Along the River." A well managed composition. The curved bend of the shore leads the eye into the view, and has sufficient interest without being too pronounced. The figure is well placed and properly posed, and the high horizon line adds to the pictorial effect of a composition so arranged.

1453. *Charles S. Kleisch*.—"Along the Road." The camera should have been made level, and you might have selected a point of view to exclude the objectionable signs to the right. The center of the view has some good features and which might make something pictorial.

1454. *James Slater*.—"Young House-keeper." The figure is too constrained in the pose it has assumed, and the manner in which the broom is held would hardly carry out the assertion of the title. The model should have been better focused. The indistinctness would be more allowable in the background; the focus is too far back.

1455. *H. B. Snecsbey*.—"Interested." The best feature in the picture is the pose of the head upon the shoulders. The expression is well brought out, but the management of the drapery is not good. It is too confused and detracting. The hands are not well posed, and one has to refer to the title to discover that the model is reading.

1456. *C. L. Snyder*.—"The Sunset Arch." The point of sight is well taken to exhibit the structural beauty of the arch and the perspective is excellent. The illumination, however, might have been better considered. The light is too flat and uniform and not of a character to give the relief such a subject demands.

1457. *C. R. MacCarrick*.—"Outdoor Portrait." The portrait has the proper degree of relief, so that it stands out well from the background, and the general lighting is good. The background is a trifle too dark. The figure should have been placed further from it, and the head of the model turned just a little more to the front. It would then exhibit the attractive features to a better advantage.

1458. *Zelig Abelmein*.—"A Road in the Woods." The photographic scene has some pictorial points which a better treatment would have brought out more prominently. In trying to secure the roadway you sacrifice the essential good features.



No. 1455. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Thornton-Pickard; Bausch & Lomb lens; $f8$; August 2 p. m., bright sunlight two seconds' exposure; pyro-soda developer; Azo hard print.



No. 1470. *Data.*— $3\frac{1}{4} \times 5\frac{1}{2}$ Premo film-plate special; Kodak anastigmat lens; $f16$; June 3 P. M., good light; 1-25th second exposure; M. Q. developer; Cyko No. 6 normal print.

Your horizon is taken too high, and the result is too much of an uninteresting foreground is shown. The mass of intense shadow without any relief is unpleasant, and the telegraph pole is certainly not deserving of the position it occupies. If you could leave out the pole and cut off the lower half of your subject, there would be some improvement, but the chief fault lies in poor point of selection. There ought to be a picture possible, but you have missed it.

1459. *Dan W. Smith.*—"Dreamy River." There is considerable sentiment expressed and your picture appeals to the imagination. The suggestion of atmosphere is

highly pictorial, and the masses of light and shade are well managed. It is unfortunate that such a good picture should be marred by the heavy mass of black at the top. You appreciate this yourself, no doubt, and wish for the painter's power to remedy things.

1460. *V. G. Borges.*—"Mercedes." The pose of the head and its relation to the shoulders of the model are most excellent, but the vignetting is bad. The shadows are too abrupt and the lower portion is a mass of darkness. Vignetting, to be effective, should imperceptibly gradate into the background and show no distinct line of separation. It will be of advantage to



No. 1463. *Data.*— $3\frac{1}{4} \times 5\frac{1}{2}$ Premo C; Planatograph lens; U. S. 8; August, flashlight and time exposure; M. Q. developer; glossy Velox print.



No. 1457. *Data*.—5 x 7 Conley B. S.; Isostigmatar lens; *f*5.8; May 3 P. M., bright sunlight; one-half second exposure; pyro-soda developer; Disco P. O. print.

you to read the papers on vignetting recently published in *THE CAMERA*. Vignetting, when artistically done, produces a beautiful effect and a suggestion of atmospheric surrounding, giving a fine artistic relief, but it should never be attempted unless you are able to do it properly; and we are compelled to say that your otherwise good portrait is materially injured by the slovenly way in which it is vignetted. Try again.

1461. *John W. Andrus*.—"Last Remembrances." The general treatment is good, but there is room for improvement in the photography. The negative is somewhat over-developed, with the result that the high-lights are clouded over and the picture lacks snap and vigor. Neither the quality of the marble, nor that of the flowers is properly rendered.

1462. *H. B. Diehl*.—"Shadows and Sunshine." There is too much recurrence of similar forms in the composition. Note the almost identical repetition of the trees at the centre. The impression is too much that of a trimmed park, rather than the careless grace of a natural scene. The lighting, besides, is not effective. There is too much monotony.

1463. *Wm. Siems*.—"Family Group." The group is a large one and hence difficult to properly arrange, but it might have been disposed less formally. There is no suggestion of the reason for the assembling of the persons other than to have their portraits taken, and so it is

really merely a collection of individual portraits on one plate. The illumination is too direct. You should have raised the flash a little above the heads of the figures.

1464. *E. Peterson*.—"A Game of Chess." The upper portion of the picture is particularly good. The grouping is excellent and the interest well expressed. The background, though a trifle intensified, is not too obtrusive and fits in well. The defect as a whole is due primarily to the white cloth, which acts as a dividing line in the picture. It was unnecessary, anyhow. The dark cover of the table would have gradated the light downward to the bottom of the picture, and your subject would then have little to find fault with.

1465. *Carl L. Oswald*.—"Home Portrait." This is a good head study and the general pose of the figure is excellent. The lighting, too, is effective and the background pleasing by its quietness. The drapery is not properly treated. The folds are confused and ungraceful, and the abrupt termination at the knees with the vertical kewpie doll upon the lap makes an unpleasant line.

1466. *Samuel P. Ward*.—"Drying Sails." The treatment of the boat and the sails



No. 1465. *Data*.—No. 1A Kodak; R. R. lens; U. S. 4; August 10.30 A. M., bright light; two seconds' exposure; pyro tank developer; Portrait Velox print.



No. 1468. *Data*.—Premo 3A Special; Zeiss anastigmat lens; *f*6.3; October 3 P. M., fair light; one second exposure; pyro tank developer; Azo grade E hard print.

shows well the characteristics of the picture and brings out well the qualities of the craft, but the tone of the whole picture is too uniform and monotonous. The reflections, while good in line, are not true to nature. The images of the sails and boat do not suggest the surface of the water, and there is no difference between the sky and the reflection of it.

1467. *A. B. Lamantain*.—"Fragrance." This is not a very successful flower photograph. The floral texture is not well indicated, which is due to improper management of the light; the illumination is too much directly in front. If the lighting were allowed to come in a little to the back, the quality of the translucency of the rose would be indicated. As it is, it looks more like a rose carved out of marble; not a living thing.

1468. *A. Erickson*.—"Portrait." The figure is posed with too much rigidity and too much right-about-face. The photographic quality, however, is excellent. The position of the arms suggests amputation, and the whole figure should have been

turned somewhat and the head inclined more to the left so as to get more shadow upon the face. The lighting is entirely too flat.

1469. *Leon F. Bowes*.—"Lake Michigan." The photograph is hardly characteristic of the Great Lakes; it might be a view on water anywhere. The pictorial value is practically nil. The horizon slants and the steamer does not seem to be progressing, and what is there pleasing or worth the expenditure of a plate upon a row of piles and a line of uninteresting fishermen?

1470. *S. W. Singer*.—"Columbia University Library." A poor piece of architectural photography, having pretty much all the faults possible to secure. Notice how the building tilts back, as if about to topple over. You failed to properly level your camera and then you failed also to get the structure under proper conditions of illumination. The flat, even light destroys all suggestion of relief, so essential to a picture of a building. You should select a time when the side of the library is in shadow. This would give the appearance of solidity and depth, which your view misses totally. You give us no idea of the beauty of the building. It might as well be a picture of a wooden house, as far as the textural quality of the stone or marble is concerned. The whole photograph is flat and uninteresting and you want to study up something about architectural photography.



No. 1473. *Data*.— $3\frac{1}{4} \times 4\frac{1}{4}$ Ica; Icar-Zeiss lens; *f*6.3; August 3 P. M., 1-50th second exposure; Agfa M. Q. developer; Cyco professional print.

1471. *M. F. Schammel*.—"Rustic Bridge." The only pleasing feature is the flecked shadows upon the road. There is nothing pleasing in the bridge, and the treatment of the foliage is very poor. The lighting is too uniform and there is no suggestion of depth to the picture. Everything is on one dead level. You have done much better than this.

1472. *Arthur C. Smith*.—"Old Bridge." The natural view probably presented much that is pleasing to the eye; because our vision has a modifying agency in control of the light and shade, and you not appreciating this, imagined that the plate would present the view as it appeared to you. The whole trouble is in the character of the illumination. The light is too flat and uniform. Try it again when there is more variety of light and shade. You must cultivate the photographic sense as well as the artistic.

1473. *Robert Scheindlinger*.—"Posing." Your model certainly is posing. If it were not for the pleasant expression upon her countenance we might be led to think she was some poor spy nurse lined up against the wall. Your model is a very good one, and deserves better treatment photographically.

1474. *L. E. Cattell*.—"Near the Close of Day." The only feature presenting interest in your picture is confined directly to the centre of the view. The masses of black and uninteresting material detract much from the view. It is wholly unnecessary to the interpretation of the motive. Had you confined your attention to the central portion and not have developed the negative to the cast iron degree, you might have had something quite pleasing.

1475. *J. O. Mesa*.—"Morning Haze." The view is unpleasantly divided by the straight dark trunk of the tree. This gives you two distinct pictures; the one to the left being the better. Such a combination in a composition is detracting. The attention should be centred upon one topic, and the elements which go to make up the picture should combine to a unity of idea and not draw away the attention by compelling one to contemplate two views at once.

1476. *F. A. Klein*.—"W. F. S." A good character portrait with flesh values well expressed and drapery kept properly in subordination. Proper atmospheric relief is also secured by employment of suitable background setting of the head.

1477. *B. E. Kimbark*.—"Ivy Covered Cottage." You have included too much in the picture. The portion to the left, while having some features of interest,

draws away the attention from the essential of the picture. By excluding about two inches in this direction and cutting off a little from the foreground, you will give us the sentiment of the picture more emphasized and a better balance to the whole subject.

1478. *H. H. Miller*.—"Sunshine and Shadow." The photograph has little of pictorial value. The contrast of light and shade is excessive, due to insufficient exposure and in too strong a light. The effect is a mere mass of black and white, without gradation of light and shade.

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LENS AND PERSPECTIVE

The apparent abnormal perspective of a wide-angle lens is not caused by any defect in the lens, but from the nature or position of the subject photographed which the lens reproduces in true mathematical perspective. Nevertheless, a wide-angle lens has a certain inherent defect which is not taken into consideration. It is contrived to give good average definition over a wide field or area of view; but in order to secure fine definition at the margins as well as at the centre of the plate, the surfaces of the lens have to be so modified that the focus is nowhere absolutely sharp. Therefore, for the rendering of detail, as is often necessary in copying, a narrow-angle lens is preferable.

The human eye embraces an angle of about 180 degrees, or a hemispherical field, a sort of panoramic view. Such a feat is beyond the actual capacity of any wide-angle lens unassisted, and really could only be had on a concave surface of a panoramic camera with a movable lens front. The retina of the human eye has just such a surface, and for this reason, we get with our normal vision a perspective very different from that obtained with a wide-angle lens upon a flat surface and hence the cause of the unpleasant perspective made by the use of such a lens.

FIXING WITH POTASSIUM FERROCYANIDE

It has been found that prints on "printing-out" or developing papers can be fixed very quickly by immersion in a solution of yellow prussiate of potash (potassium ferrocyanide), without dissolving out the unchanged silver chloride. After the usual exposure and developing the prints are rinsed off and placed in a 15 per cent solution of the ferrocyanide for two or three minutes and are then washed briefly. The prints are light-proof; probably owing to the formation of silver ferrocyanide or some double combination. Of course the discoverer has applied for a patent (in Germany), although in Eder's "History of Photography" it is stated that as long ago as 1839 potassium ferrocyanide was recommended for fixing.—*Photog. Rundschau*.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

Business and art do not usually go together, but this cannot be said of Edward Earle, the popular screen player. A chat with Mr. Earle brought out the fact that he is opposed to the forceful methods adopted in film advertising.

"One of the points in favor of the press publicity is that you are not compelled to read the advertisements," remarked Mr. Earle. "They win out on their own merits, for if one is sufficiently compelling, your attention is automatically called to it."

"But the make-up of the photoplay theater screen differs in that only one thing may be presented at a time. If an advertising film is unfolded, you are compelled to give it your attention. Nothing is more distasteful to Americans than compulsory methods, and it is my belief that motion picture advertisers unconsciously get in bad with their prospects. It is a human trait in buying to be able to choose between goods of the same kind, but as the exhibitor only rents out his screen to one advertiser in each trade, the public cannot discriminate as they would like. I honestly think this condition of things has a tendency to make advertisers dull and listless."

"Do you consider this forced treatment can be avoided?" I asked.

"That all depends," Mr. Earle commented. "The average photoplay program occupies two hours. To lengthen this so as to include advertising pictures, the exhibitor has either to open his show earlier or else curtail his performance. The former step would not be practical, as his busy hours are from seven to eleven in the evening, in which time he gives two performances. If the advertising film was about one reel in length the exhibitor could just about squeeze it in. This should be shown at one theater for a day, as the regular fans dislike to see a picture more than once. It will also allow other advertisers a look in."

"If the advertising story can be told in less than one thousand feet, so much the better," said Mr. Earle, warming down to his subject. "I notice some commercial producers offer to release several subjects by different advertisers on the same reel. I know in the case of press advertising that it is a mistake to cram as many words as possible into a small displayed adver-

tisement, but in film publicity it is the reverse."

"The more material you compress into a film the snappier it will be, though clearness should not be overlooked. The bugbear in the motion picture industry today is padding, and I should be sorry to see national advertisers fall for it. A film may occupy the screen longer, but it will certainly not impress spectators any the more."

"The big advertisement has its place in filmdom if the story succeeds in maintaining the interest from start to finish, but you must remember that a whole page magazine announcement can be read in about two minutes, while a feature (its motion picture counterpart), absorbs an hour of one's time."

"But there is no room for the big feature in the regular photoplay theater. If I am not mistaken, there will spring up in the large cities a chain of photoplay theaters, to which the public will be admitted free. At these 'billboard stations,' short, regular photoplays will be sandwiched in between the ad films so as to attract the folks inside." There is much food for thought in the point brought out by Mr. Earle.

Out in California, and even in the East during the summer, it is possible to stage interiors in the open on a platform without the aid of artificial light. You can always recognize this kind of interior when the wind plays havoc with the window curtains. On the days when this inexpensive method is out of the question you will need an indoor studio.

The ideal location for a studio facing north and south is an elevated position, so that other buildings will not shield the daylight. It is best that the roof be about twenty feet above the stage. The glass used for the roof should extend to within three feet of each side.

The regular producers use three kinds of lamps for interiors—the mercury vapor lamp, the arc and the thousand watt gas-filled incandescent. There will be days when the daylight will require but little artificial aid, and in this connection the thousand watt gas-filled incandescent is unequalled. But when the daylight is inferior, the other two lamps may be em-

ployed. Of the two I would advise the mercury vapor lamp. The arc sheds such brilliant rays that it seriously affects the players' eyes, which are often inflamed in consequence. The mercury vapor lamp is not so powerful, yet it does not consume so much current and gives a nice, soft light for photographic purposes. The mercury vapor lamp is in the form of a tube, from twenty-eight to seventy-five inches long, with a 500 to 6,000 candle capacity. These lamps light a fairly large area. The producers, as a rule, arrange the tubes in unit banks, each one containing eight tubes. The reflectors supplied in connection with the tubes are satisfactory for still photography work, but motion picture exposures are so short that double the number of lamps are needed. It is therefore advisable to employ white enamelled semi-cylindrical reflectors.

Next is the arrangement of the lamps. If you desire to take big scenes you cannot do better than adopt the fixed light method. The use of portable lights, however, allows you to concentrate all your lighting facilities on a single small scene. You may use overhead trolley or monorails for switching the lights in the desired position, or else have the lights fixed on to frames and moved on casters. When it is necessary to shut out overhead light, use a heavy canvas screen, fixed by ropes above the players' heads. Attach this in such a way that it is easy to cut off any angle of side lighting.

You cannot light every scene in a like manner—you have to be governed by the principles of interior lighting. If, for instance, the time is twilight, you must suggest the shades of light. The same is true in regard to a workingman's home and a millionaire's mansion.

Much depends on the staging being in harmony, and things to be avoided are glossy, white bric-a-brac, deep black picture frames and furniture.

The most general principle of lighting is on a gradual scale. Make it more powerful on one side than on the other, also make the light stronger at the front of the set than at the back. Also take care of the top lighting, as the attention to all of these details ensures the actors being shown up in relief. Lastly, do not neglect to provide adequate ventilation, for the powerful artificial light is apt to make the studio stuffy.

Motion picture shows are given at sixty-six of our principal army camps. A big assembly tent, large enough to accommodate over twelve hundred persons, is installed at each camp. During the hot weather these tents are converted into aerodromes. The soldiers view the photoplays from a screen, twelve feet square, and one which would not disgrace a high-grade theater.

The entertainments are under the supervision of the post chaplain, who rents suitable comedies and dramas from the local film exchange. Additionally, a technical subject (such as target practice) is obtained from headquarters as well as instructive lantern slides, which are provided by a special fund. To help cover the cost of giving such performances a small admission fee, ranging from two cents to a dime, is charged. The pictures are accompanied by a phonograph.

You might as well attempt to put on a photoplay without "props" as to attempt to photograph it without a camera. Maybe some special dresses or furniture are needed. The story may call for the interior of a store, with equipment to correspond. There is no need of you to incur the expense of paying for these services.

If your production will be put on at one of the local theaters, you can approach the storekeepers to grant you the favors you need. In return offer to run "Costumes by Blank and Company" on the photoplay and on all advertising matter. They will gladly co-operate with you, because of the valuable publicity they receive.

The educational motion picture may be regarded as a competent assistant, and it is foolish for people to run away with the idea that it will eventually displace teachers. The wise teacher today imparts the lesson to his pupils in the usual way. He is then ready to exhibit the film or films covering the subject in question. While the picture is being reeled off, he draws the attention of his pupils to the most vital points, as these are quite apt to be overlooked among the multitude of details. Sometimes a stereopticon is used to enable explanatory slides to be projected, for a film cannot be shown in a stationary position. The motion picture changes too quickly to elaborate on any point.

There is danger in the speeding-up methods governing the presentation of film subjects of cramming too much into a child's brain. Some pupils possess more intelligence than others, so it is advisable for the teacher not to show another picture until the preceding one has been mastered. At this stage the lights should be switched on and the pupils questioned or assigned a composition.

English was generally considered to be an out-of-bounds subject, but a letter I recently received from a girl of fourteen proves that the contrary is the case. This is the gist of it: "At the grammar school, which I am attending, I had to prepare a composition about the red Indians. I had not heard very much about them, so it was not an easy task. One Saturday afternoon I went to a motion picture show and saw a picture of some Indians. They

were having war with some settlers that had settled in some part of the country. I saw how they fought, how they decorated themselves, how they earned their living and how they lived. It was a strange sight to see these redskins, but I soon came to know what kind of people they were, and I finished my composition in good shape. This is the reason why I could write my composition."

The following is a choice extract from an article in the November *Motion Picture Magazine*: "A scene may represent the interior of a home or office in the city. You expect the streets below to teem with animation, whereas all you are shown is an ugly block of buildings.

"It is easy, of course, to account for these effects, for, under ordinary conditions, the interiors of all kinds of buildings have to be set up in the studio. The progressive director, however, makes use of a newly discovered method which enables him to obtain the desired illusion at the expense of more time and trouble.

"Suppose you 'enter' the front parlor of a luxurious home, and through the window you see a typical avenue in a high-class neighborhood, with autos passing to and fro and well-dressed people on foot.

"The director who believes in realism accompanies his camera-man to the nearest fashionable residential section and there takes a scene which will harmonize with the interior. When the two negatives are developed, the photographer cuts and joins one negative to the other with such skill that the outdoor scene fits into the 'window' like a glove."

A company of motion picture players arrived at the famous Empire mine in Grass Valley, California, and is busily engaged in the filming of several underground scenes. Some of these scenes are being photographed 6,000 feet below the ground under extreme difficulties.

This is the first time in the history of motion pictures that scenes were ever filmed at this depth and some wonderful effects are expected for the new photoplay, "The Right Direction."

After the mine scenes are taken the company will enact other bits amidst the beautiful surrounding country. Residences at the mines compare very favorably with some of the most beautiful Los Angeles dwellings and various elaborate homes will be used in the photoplay. "The Right Direction" tells the story of a beautiful waif from the tenements of a big eastern city who starts out to seek fame and fortune for herself as well as her baby brother. Although California is their destination, they start out afoot and meet with many difficulties resulting in an unexpected climax.

A BOOK OUT-OF-THE-ORDINARY

Light and Shade and Their Applications, by M. Luckiesh, Nela Research Laboratory, D. VanNostrand Company, New York. Cloth, 266 pages, \$2.50 net.

The few treatises upon the subject of light and shade in their application to art have but tentatively treated the topic in an analytical way, and have left much to be desired in the way of approaching the practical application to the various fields in which the matter is of pertinent value.

The present work by Mr. Luckiesh considers primarily the scientific phase of the problem. Its object is to record the observations on light and shade from the basis of the fundamental principles of lighting and vision.

How much the enjoyment of the perception of things depends upon the conditions under which they are viewed. It is a long time before the eye becomes trained to an appreciation of the beauty possible only by the character of the illumination. The same object may be a thing of beauty or a mere distortion of the original, according to the way the light may fall upon it and apportion the shadows and half-shadows. No one appreciates this truth more than the photographer, and he is ever anxious for some systematic treatise which shall reduce the subject to general principles, so that instead of tentatively feeling his way he may approach with confidence and assurance of positive results.

The author of this work has taken the proper viewpoint. He directs the learner how to observe, record and control his illumination to produce the varied results so essential to his profession. He shows how to study the application of the fundamental principles; the effects of the distribution of light, its relation to the object illuminated and the influence of surroundings upon the scene of illumination. Photography is really the art of applying the scientific principles involved in the action of light to the production of æsthetic effect, and it is just here that this book becomes a most important aid. The subject is treated in a scientific manner, but with due consideration to the particular demands of the photographer, and so presented as to be fully within the comprehension of those who have not received a particular scientific training.

It is a book the photographer has long desired, and a special section is devoted to light and shade in photography. It is embellished with 135 illustrations and 10 tables, which increase still more its usefulness to the photographic profession, and is an invaluable adjunct to the library of every photographer.

We can supply the book at the listed price.

Letters to the Editor

Dear Sir: Here is an idea I believe you can use. My dark-room is sometimes quite cold; developing and fixing solutions for that reason get cold quickly. I have overcome the difficulty by placing a 16 candle-power electric light in a box that a case of plates came in. The box is made to fit the tray. By this method you can very easily keep the temperature correct to within two or three degrees, even though the temperature of the room is low. This method, I believe, is superior to hot water bags, as the light can easily be turned off and on, and the temperature be kept within three degrees.—F. R.

THE PHOTOGRAPHIC SOCIETY

I am prompted to write what may seem to be a pessimistic opinion, through disappointments in several photographic clubs and societies. Tonight I visited, for the first time, the club rooms of the photographic society of one of our large cities. In the rooms I met several men sitting around the rooms in varied poses of tiresomeness, with different expressions of boredom. This club, by the way, convenes only once a week and the meeting starts at 8 o'clock. It was 8.30 when I arrived, and upon requesting to see the secretary, I was told that he had gone home fifteen minutes previously. So the secretary considers the club worth about fifteen minutes of his time per week. Surely a most progressive organization! This, however, could be easily excused. The secretary may have a girl, or he may be married so happily that he cannot spend any time away from home. Be this as it may, the most surprising thing was the condition of the club rooms, surprise at the rooms preventing any surprise at the attendance, which was five. Three in the club room and two in the dark-room, looking at old negatives. What the rooms needed most of all was a most thorough cleaning and renovating.

In a city of this size the local photographic society should have the support and interest of all the dealers, the best portrait and commercial studios and the most enthusiastic amateurs. But how in Sam Hill could the interest of these people be aroused in a society housed in rooms reached through three flights of musty stairways, when the rooms themselves are of a nature not to be tolerated by anyone possessing the least bit of fastidiousness? The photographic art is, or at least should be, one of the most refined arts and sports, and everything associated with a society of cameraists should give an impression of

cleanliness and fitness. Such a condition would warrant the fixing of a reasonable and sufficient entry fee and monthly or yearly dues to provide the extra funds needed for the proper maintenance of suitable club rooms. Nothing can provide more pleasure than a club composed of members of mutual hobbies and interest, meeting under pleasant conditions. There are photographic clubs and societies such as this, but there should be more of them!

C. IRVING REED

[Mr. Reed, in his letter, only reflects too graphically the general condition of photographic societies all over the country. There seems to be a universal apathy among amateur photographers, who individually are the best of fellows and enthusiastic in their work, but collectively, they seem to dissipate the spirit of enterprise and mutual effort until it is so evanescent as to volatilize into thin air, the rarity of which serves only by its hypnotic influence to put them in a deplorable condition of somnolence.

We are unable to divine the cause of this unfortunate state and have sought to determine some means of stimulating to the old-time spirit which made the photographic society of the past such an important factor in progress. We have hardly come to the conclusion that it is due to climatic conditions, since our latitude has always been looked upon as a potent stimulous to effort, and so we must refer it to a nationally inherent want of



STAFF PHOTOGRAPHER—When you let go face the camera.—*Judge*.

sympathy for the other man and a selfish desire to let him "paddle his own canoe."

This deplorable state, so manifest everywhere in this country, does not prevail in Europe; at least not in England, if we are to judge by the reports we have in the photographic publications of the meetings of clubs in that country. The English societies seem to be doing yeoman service, and are alive with interest and enthusiasm. But here we are apathetic and indifferent. We refrain from any personalities, but we could duplicate stories of the kind Mr. Reed gives us of the dry-rot condition of American photographic clubs. We do not say this in any spirit of petulance, but only with profound regret that such is the case. —Ed. THE CAMERA.]

PHOTOGRAPHING THE INTERIOR OF THE BODY

A Dane named Schiern-Friedrichsen has invented and applied for a patent for an apparatus for photographing the interior of the stomach and other parts of the body. The upper part consists of a slightly flexible rubber tube, to the lower end of which a piece of steel tube is fitted, in which photographic apparatus is placed. The light for operating is obtained from a specially constructed diminutive arc-lamp made by the inventor, hung before a concave mirror which throws the light through a lens, and is strong enough to take a series of pictures on a strip of ordinary film. The light of the arc-lamp is white, in contra-distinction to that of the carbon filament lamp, which has been tried unsuccessfully for similar purposes. The electric current is conducted by wires passing through the rubber tube. In front of the patient's mouth is placed a specially constructed cinematographic apparatus. As is well known, the living stomach is in constant motion, and it has been heretofore a very difficult matter to photograph the bright red of its inner lining.—*Photographische Industrie.*

*

N. Sulzberger, in *Photo-Rundschau* recommends the use of yellow prussiate of potash (ferro-cyanide of potassium) as a fixing agent for gas-light paper prints. The fixation is effected quickly. The exposed and developed print is first washed under the tap for a minute or so, and then placed in a 15 per cent solution of the ferro-cyanide of potassium and allowed to remain therein for two or three minutes, then rapidly rinsed under the tap. The writer claims that the image so treated is unaffected by the action of light. In other words, is properly fixed. N. Sulzberger has applied for a patent on his method, but it is hardly possible to establish priority of application of this salt for this purpose, since Dr. Eder, in his *History of Photography* mentions the employment of the ferro-cyanide as a fixing agent for silver chloride as early as 1839.



We have been informed by the C. P. Goerz American Optical Co., 317 East Thirty-fourth Street, New York City, that adverse conditions caused by the European war have compelled them to cancel and withdraw all former prices. The company reports that while the war has somewhat interfered with the delivery of their cameras, yet, as regards lenses, they have been more fortunate. Prior to the war they had imported a large quantity of genuine Jena glass, which their completely equipped optical factory in New York City has been turning into *Goerz Lenses* without interruption. At present the company is in a position to supply nearly all its lenses with but few exceptions. A new catalogue, containing a list of such goods and accessories as they are able to furnish in reasonable quantities, is now on the press. It will also contain the new list prices which are about 10 per cent. in advance over the prices in force prior to October 1, 1916, and will be ready for general distribution within a short time.

G. Gennert, 24 East Thirteenth Street, New York City, has been appointed trade agent for paramidophenol-hydrochloride, a new product from the Edison laboratories and a substitute for metol. It is sold with a guarantee and at a moderate price—\$12 per pound; 85 cents per ounce.

The Folmer & Schwing Division of the Eastman Kodak Co. have just placed on the market a Finger-Print Camera that is quite an innovation. The makers describe its working as follows:

"As the camera is equipped with four electric lights, operated by batteries contained in the camera, the operator is not hampered by darkness. Day or night, indoors or out, the camera gives equally perfect results. No expert knowledge of photography is required for the successful operation of the camera, as all unnecessary adjustments have been eliminated. To photograph a finger print or other subject, it is simply necessary to open the metal door at the front by pressing a button on the under panel, and place the front of the camera firmly on the subject to be photographed, draw the dark slide in the plate or film holder, and make the exposure by pressing down on the lever at

the right. The action of pressing down the exposure lever automatically turns on the four lights, and at the same time opens the shutter. The lens is of the correct focal length to record the finger prints full size on the negative, from which enlargements of any size may be made. Immediately under the exposing lever a small metal button is located; pressure on this button turns on the light without opening the shutter, enabling the operator to use the camera as a flashlight for locating the finger print. Storage space is provided inside the camera for six extra lamps."

An exchange says: "A pyro-developed negative may, after drying, be again developed in pyro, and heated considerably without melting the gelatine, and a negative so treated shows a density almost double that possessed before heating. A considerable relief is also noticeable, and is accompanied by the formation of a stronger grain, which seems to justify the presumption that several silver molecules have united into larger masses. An emulsion with metallic silver will also ripen similarly to the bromide of silver emulsion. It has also been noticed that a negative taken frequently from the bath and held to the lamp, during the process of development, for examination, develops more quickly and with greater density than if left quietly in the tray. It is assumed that the increase of temperature is the cause of this increased action in development and density, and the application of heat has been suggested as a means of intensification. Pyro and hydroquinone are said to be more responsive to this treatment than the other developing agents in common use."

A NEW CONVENIENCE ON THE CAMERA

The convenience of the camera has been further increased by the addition of a means for accurately judging the actinic value of the light at the time of making a picture and thereby arriving at the correct length of exposure to be given the sensitive film. The improvement relates particularly to those cameras which carry a roll film. As these films are now made they are backed with a sheet of black or red paper for the purpose of protecting them from the light, and they have imprinted upon them numbers which appear under a tiny opening in the back of the camera and serve as a guide to the operator in properly spacing the exposures on the film. The new scheme, in addition, contemplates attaching to the backing paper pieces of sensitized paper at regular intervals, which pass along under another opening, and by observing the change which takes place in the color of these pieces as they are exposed under the opening, the operator is enabled to arrive at the length of time the shutter is to be opened in making the desired exposure.—*Scientific American*.

RECENT PATENTS

A Double Exposure Prevention Mechanism for Roll Film Cameras. When the shutter is actuated, its operating lever is locked against further movement until a fresh portion of film has been moved into the picture space. A flexible cable connects the lever lock with the winding mechanism.

A Repeating Pump-gun Camera. A roll film camera is mounted at the front end of an imitation rifle barrel having the usual stock. The trigger on the stock actuates the camera shutter while a sliding grip is moved back and forth to feed the film, the movement resembling the motion used in changing the shells in a pump gun. The camera is aimed by sights mounted on the barrel.

A Photographic Camera of the Autographic type. In the back thereof is a holder for carbon paper, the latter being so arranged that it can be fed at will across an autographic opening in the camera back through which characters may be written upon the carbon paper. The paper backing of the roll film is of such density that one thickness will not prevent the passage of actinic light, but several thicknesses will do it. Consequently, when characters are written on the carbon paper and sufficient light is admitted thereto the writing will be printed through the backing paper on to the film.

A Process of Color Photography Especially Adapted to Motion Picture Film. A pair of negatives are taken through complementary color filters and a positive is produced from one of them, e. g., the green color value image. This positive is combined with the red color value negative and a print made therefrom. The silver image is toned green and rendered impermeable to dyes. The untuned gelatine is then dyed the complementary color red. This colored print is finally combined with a black and white positive of a negative made by both green and red filters.

A Method of Making Transparencies in Color by taking two negatives of the object to be photographed through red and green screens, developing the films, bleaching them in a solution composed of potassium ferricyanide, potassium bromide, potassium bichromate, acetic acid and potassium alum, thereby removing images and tanning the gelatine, thus rendering it locally impermeable to a dye where the image is located according to the light gradation recorded, fixing the films, dyeing the red color value film green, and the other film red, the dyes penetrating the untanned portions, fixing the dyes in the film and finally placing the films in superposed register, so their combined color effects may be viewed by transmitted light.

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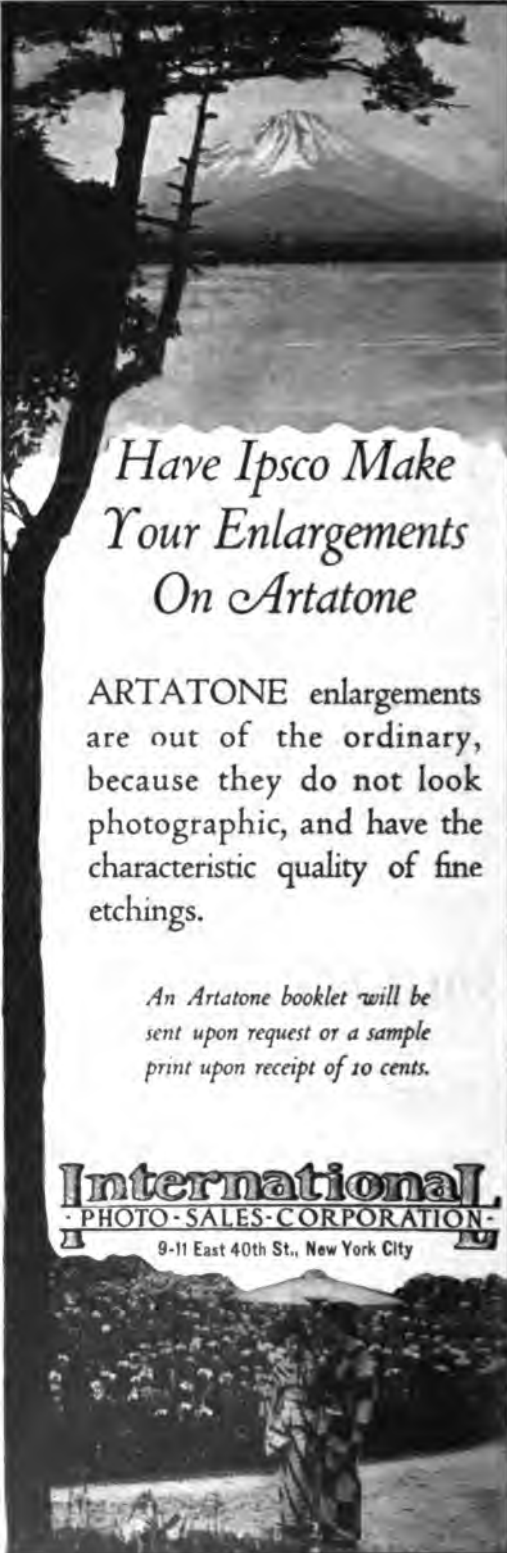
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Entered at Philadelphia Post Office as second-class matter.

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Volume Twenty

DECEMBER 1916

Number Twelve

IDEALS OF TODAY IN PORTRAITURE BY PHOTOGRAPHY—C. H. CLAUDY

FREQUENTLY I receive questions from readers of *THE CAMERA*, and they are among the most pleasant of all to answer, because once a beginner with the camera recognizes that there is nothing in common between art and photography, *save as the user makes it*, he is on the way. There are infinite possibilities in the camera—but of itself, it can no more make a real picture than can the brush and palette of the painter make him a portrait. Behind any real portrait—painted or photographic—must be knowledge. Some of the questions asked me are as follows:

“Why are some portraits artistic and others not?”

“What is the difference between a picture and a portrait?”

“Why are some soft photographs beautiful, others absurd?”

“When is a photograph artistic?”

The earliest of all attempts at representing solid objects upon a flat surface were drawings in line. Since the days of prehistoric art beginnings, line and drawing have been the foundations upon which all the superstructure of graphic art has rested. When, therefore, science put in the hands of everyone a means for making representations of solid objects which was not only perfection itself in line, but added to it a greater perfection in drawing and perspective than the most skillful hand could obtain, it was only natural that photography should be hailed at once as the royal road to art.

How far short of artistic performance the new process fell, in its earlier days, is a matter of history. It required only a few examples of the map-like images which the first cameras made to show that whatever the new process might bring forth in the future, what it produced then was a perfect technique without an iota of meaning, much as a barrel organ may produce perfectly the notes of an overture but never play music. The very excellence of the drawing of the new process, its microscopic definition, its pitiless rendition of detail, much more minute than any seen by the eye, condemned it utterly

as a process of pictorial art. To call a painting "photographic" soon became the greatest anathema which could be pronounced. To call a photograph "painter-like" soon became high praise to the devotees of the new process.

As soon as the photographer found that the artist decried his medium because of the very perfections for which he held it in great admiration, he began to discard these perfections and to imitate those which the world of art held in high esteem!

The result was a chaos which is even yet in the process of being reduced to order. We had photographs intended to look like etchings. We had photographs which pretended to be lithographs. We had photographs which aped Impressionism at its greatest extreme. Had there then been such a thing as Futurism, undoubtedly we would have had Futurist photographs, perhaps made by exposing the same plate to the same subject from half a dozen different and successive points of view! Photographs were broad, were flat, were smothered in fog, were without detail, without tonality, without everything that makes a photograph a photograph, in order, if you please, to imitate the painter and win the approbation of the world of artists. The so-called "fuzzy-graph" came more and more into popularity among certain ardent disciples of that character of Art which is spelled with a capital A and spoken in hushed tones, the principal tenet of which seems to be vagueness.

As applied to the landscape, this futile attempt at imitation was bad enough. When it came to portraiture, the results were as appalling in one direction as those early, glossy prints, maps of faces and of clothes, were in the other. From being able to count the pores in the skin, the stitches on a lace collar, and the hairs in a beard, we were asked to admire photographic portraits which showed a misty dab of fog for a face, a white splotch for the collar and a shadow for the hirsute facial adornment. Eyes which had been fit for illustrations in an oculists' text-book became holes in a blanket. Instead of the mechanical perfection of drawing which a properly made and used lens can render, we went without drawing at all, lines being smothered in mistiness caused by no more abstruse skill than was required to throw a lens out of focus.

And the public—save always for the little devoted band of fanatics which any so-called art movement can always collect, no matter how weird in conception it may be—would none of it. The glossy collodion print which aped the perfection of the early daguerreotype with none of its beauty, failed in its appeal when that appeal was made to anything but recognition of technical accuracy. The fuzzytype, with its vagueness, its smothering of all that might make a photograph beautiful and its substitution of something which was neither drawing nor painting nor modeling nor feeling, stuck firmly in the mire of public laughter, where it still remains.

Let no one misconstrue this statement. A soft print, a picture made in broad masses rather than in detail, is not necessarily a "fuzzygraph." The "fuzzygraph man" makes *everything* vague by throwing his image out of focus, or unscrewing the front combination of his lens, or juggling the camera!



"ELSA." CHARLES H. DAVIS, NEW YORK



"MISS G" R. D. HALEY, BRIDGEPORT, CONN.

From a Gum Print by a new method. Our illustration does not do justice to the beautiful original print.

But the *artist* may employ any or all of these wiles for a needed result and get it and his fellows' admiration at the same time. It's all in knowing how. No one advises the thumb as the best of all tools with which to paint. If a Whistler or a Sargeant uses all ten fingers and no brush and gets a result, we have no quarrel. But we would have only laughter for him who painted with his fingers and claimed to be an artist merely "because Turner did it!"

While the fuzzygraph was having its feeble day, a few photographers, with real art training and a genuine love for the new tool, were gamely struggling to steer their barks between the Scylla of too evident detail and mechanical perfection and the Charybdis of a meaningless out-of-focusness. They realized that the lens and plate put in their hands a perfect instrument for unexampled drawing, but they also realized that perfect drawing was but a stone in the completed structure, and not, as the earlier photographic disciples had believed, the whole building.

A growing band, as the new idea in portraiture by photography won its slow way in public esteem, these laborers have worked out the ideals of today to some extent—by no means to their finish. The keynote is simplicity—simplicity of conception, of execution, of line, of lighting, of feeling, plus photography's greatest asset—its unrivaled power to tell the truth. The modern photographic portraitist who is more than a maker of maps of his sitter's face, endeavors not to avoid the camera's perfections for a senseless aping of a painter's technique, but so that its advantages are given full play, and its disadvantages minimized.

The early photographer demanded of a sitter that he sit or stand in a strong light, that the lens might transfer every minute detail to the resulting negative and print with remorseless fidelity. The modern portraitist, emancipated by scientific progress from the necessity of a flood of light, asks of his sitter only a natural and an easy pose. For the rest, he arranges his light, controlling it in actuality, as the painter controls it by his manipulation of paint and brush. The photographic portraitist does not commence with a dozen rapid-fire exposures, in the hope that one will do. Knowing the limitation of the camera, he attempts in some measure to overcome it by care and time. This greatest of drawbacks, of course, is the reverse of its truth-telling power, for, unfortunately, whatever else the camera may or may not do, it does preserve, at the time it is used, only the expression, pose and drawing of the subject as he or she may be, *at that time*.

If a portrait is a graphic representation of a person, using that word to mean character, personality, individuality, the good portrait is never a picture of *one* mood, *one* attitude, *one* expression. Rather is it a representation of a *sum* of *all* the characteristics of the sitter. If any proof is needed, it is found in the fact that among brush artists the best draughtsman, the best manipulator of brush and paint, is by no means always the best portraitist.

The photographer with ideals of today, then, attempts to conjure up, momentarily at least, a pose and expression of his sitter which will approximate that composite pose and expression which the painter, working from

many sittings, can so successfully obtain. That the photographer often fails is not surprising. What is surprising is that he so often succeeds. For the rest, a painstaking study of art principles, a thorough understanding of light and shade, and a keen appreciation of the limitations of any process which works in monotone, form the basis of these new ideals of photographic portraiture which modern workers, laboring more for the love of realizing an ideal than for commercial gain, strive to live to.

It is idle to contend that photography rivals or can ever displace the art of painting. But that it can go far ahead of the lifeless renditions of form and outline, the insane imitations of other processes, or the vague hysterical mysteries which have marked milestones in its progress, is fairly evident to any student who will look with unprejudiced eyes upon the efforts of those who make simplicity and sincerity the keynote of their efforts in photographic portraiture.

PRINTING WITH THE ENLARGING LANTERN—J. ADDISON REID

THERE is no subject in photography more widely written about than that of enlarging. In offering the following observations on the use of the enlarging lantern, which are the result of ideas and methods gained from personal experience, I take it for granted that the reader knows all the details of enlarging, and manipulating the enlarging lantern, and shall not weary him with any attempt at elementary instruction.

In speaking of enlarging, we usually have in mind the making of prints of large size, and of the ordinary sizes of paper, the $6\frac{1}{2} \times 8\frac{1}{2}$ size is probably the smallest that we usually consider in that connection. I wish to point out the advantages of using the lantern for making prints of ordinary sizes, the size of the amateur's own negatives and the size in which he usually keeps the greatest number of his prints. This involves enlarging, of course, but not to the extent that the photographer's friends will recognize his prints as enlargements.

The cameras usually sold for amateur use, even the most expensive ones with anastigmat lenses and high grade shutters, are not designed to produce artistic pictures covering the entire plate or film. For one full sized print that requires no trimming ten will require most heroic treatment to make the best of them.

The reason is that these cameras are designed to make negatives of certain sizes, and are accordingly fitted with lenses which, at full aperture, will just cover the size of plate used, and with only sufficient bellows extension to accommodate the lens when working at distances from the subject frequently not less than six feet.

The result is usually a picture embracing too wide an angle view, necessitating so much trimming in order to remove the uninteresting portions that the remaining print is much smaller than the negative from which it



"BEE CI COVE, NEWFOUNDLAND." O. C. BOSSYSHILL, PHILADELPHIA



"ONCE UPON A TIME." GERTRUDE KASEBIER, NEW YORK

was made. The remedy would seem to be to increase the bellows extension and fit the cameras with lenses of longer focus. But there are serious objections to this. In the first place it would greatly increase the cost, as the larger the lens the more expensive it is. Secondly, there is no hard and fast rule as to what focal length of lens will give the best results in all cases. Many prints made with the lenses regularly supplied need no trimming, while if a lens were used of sufficient focal length to give the angle of view which, on the average, would be the most pleasing, the results would mostly be unsatisfactory, unless carefully composed on the focusing screen before exposure. Otherwise, nine times out of ten, important details would be lost off the side or end of the negative. And how much of the amateur photography of the present day is done with the use of the focusing screen? More than ninety per cent of it is done with the camera held in the hand and focused by scale. A third disadvantage of the long focus lens used under these conditions lies in the fact that the longer the focal length of the lens the less depth of focus it possesses, and it is easier to focus accurately by scale with the short focus lens.

But if the amateur understands clearly the limitations of his picture-taking apparatus, and will make the enlarging lantern his ally, he has in the camera usually sold for amateur use the most versatile of photographic out-



NO. 1—CONTACT PRINT

NO. 2—THE ENLARGEMENT

J. ADDISON REID, TORONTO, CANADA

fits. Seldom, if ever, will he want a wider angle of view, and having all of his picture, and to spare, on his negative, he can compose his view much more carefully at home from a trial print than in most cases he would be able to do on the ground with a lens which would just fill the plate or film with the desired view when composed on the focusing screen.

Illustration No. 1 is a full size contact print from a 3 A Kodak film negative. No. 2 is made with the enlarging lantern from the same negative, on a piece of paper the same size, using only that part of the negative which contains the real interest of the picture.

For portraiture, perhaps even more than for landscape work, the amateur will find it of advantage to make his small prints with the enlarging lantern. I am aware that many expert workers claim that enlarging is not a satisfactory process for portraiture, but you prove the pudding by eating it, and I have proven my present proposition to my own satisfaction at least.

With the ordinary amateur camera it is impossible to make a head and shoulders portrait that will fill the negative. To make this possible, "portrait attachments" are made to be fitted over the regular lens, shortening the focus of the lens, and thus enabling the camera to be used closer to the subject with the amount of bellows extension available. With these attachments the camera is set as close as three feet from the subject.

Now it is an optical fact that the perspective of an object viewed from the same point is the same, no matter what the focus of the lens by which the image is rendered. It has also been found that eight feet is about the shortest distance at which it is possible to secure proper perspective in portraiture. This is dealt with in every treatise on portraiture, and diagrams are given to demonstrate the reasons for this fact. Imagine, then, the violent perspective that must result from moving the camera to barely over a third of that distance



No. 3

J. ADDISON REID



"STUDY." J. CHESTER BUSHONG, WORCESTER, MASS.



"STILL LIFE." GERTRUDE KASEBIER, NEW YORK

from the subject. I have seen portraits made in this way that looked very pleasing, but I fancy that to one who was well acquainted with the sitter, the false rendering would be immediately apparent. With a lens of long focus this would be made apparent by parts of the picture being out of focus, but the short focus lens has so much depth of focus that unevenness of definition can be avoided. Most of my portraiture effort is confined to making records of my children. We have hundreds of pictures of the little folk, good, bad and worse, photographically, which we treasure very carefully, but my wife has never permitted any pictures made with the portrait attachment to be mounted in their books. And yet they are good pictures technically, better than many we keep and value highly. She knows nothing about the optics of the matter; neither did I at the time. All we knew was that these pictures were most unnatural as likenesses.

But if the amateur sets up his camera eight feet or more from his subject, the face will be rendered very small in the negative, and when all the superfluous margin is trimmed from the print what remains will be too small to be satisfying. The remedy is to print it with the lantern.

Illustration No. 3 is a full size contact print from a negative made on a 4 x 5 Paget plate, with a Graflex camera, in an ordinary room. No. 4 is made from the same negative, with the lantern, on a piece of paper the same size.

Many amateurs regard the trouble of pinning up the paper on the easel as too great to be worth while for any except large prints. I have solved that difficulty, so that I find it actually easier and less troublesome to print



No 4

J. ADDISON REID

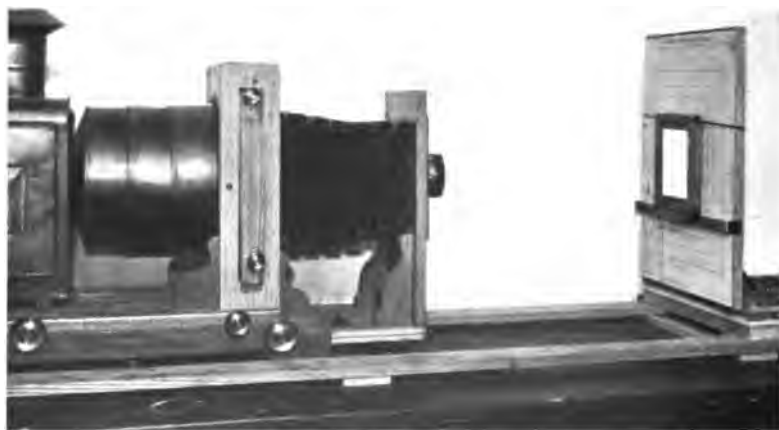
with the lantern than by contact. My easel had two adjustable strips of wood for the purpose of holding the paper during exposure. I never used them for that purpose, but they are just wide enough, so that one of them makes a convenient shelf on which to rest a printing frame. I pass a large rubber band around the easel at the height of the frame when resting on the shelf, and it is but the work of an instant to slip it over the top of the frame so as to hold it securely and keep it flush against the face of the easel.

A sheet of perfectly clean glass is put in the frame, although this is not necessary, as the rabbet of the frame will hold the paper during exposure; but I find it convenient, as I usually use a mask to give a narrow white border, which can thus be made more even than the border caused by the rabbet of the frame. A piece of white paper or card is placed in the frame, the back fastened in and the frame set up on the easel for the picture to be composed and focused. Then it requires but a moment to put in the sensitive paper and replace the frame ready for exposure, much easier, in fact, than it is to adjust the paper over a negative in the frame.

I happened to have the slat which I use for a shelf, so I used it; but it will not tax the ingenuity of any one to arrange some other kind of support for the frame. If the easel is adjustable, a narrow shelf could be nailed permanently to the bottom edge, or a removable shelf could be made to hang from the top edge, or the frame could be supported on two drawing pins stuck into the easel and held flush with the face of the easel by rubber bands at top and bottom, if necessary.

Illustration No. 5 shows my outfit in operation.

I might add that for making real enlargements, say 8 x 10, a printing frame can be used in the same way, ensuring absolute flatness of the paper and being much less troublesome than pinning up the paper by its four corners.



No 5

J. ADDISON REID



"STUDY." THE HOLLER STUDIO, BROOKLYN, N. Y.



"STUDY." KATHERINE JAMIESON, PITTSBURGH, PA.

WHY THEY FAILED—EDWARD B. STEPHENSON

MOST amateur photographers have read many articles and received much good advice on the thousand and one particular points in photographic manipulation, but still they have too many failures. It is obviously impossible to remember all these valuable suggestions every time one takes a picture, but if one knew a few of the most important troubles—in the order of their importance—he might watch those first and work down to the less important as he had time and gained experience.

During the past summer the writer had the opportunity of observing a large amount of amateur work, and decided to study it by the statistical method. The negatives and finished prints of one thousand different pictures were selected somewhat at random, but at fairly regular time intervals, from approximately fifty thousand negatives that were developed during the same time and were carefully examined and classified. The results are given in the statements and tables that follow.

The points considered were the date, number of exposures per roll, size of picture, number of prints per roll, exposure, fog, motion, focus and composition. The date gave a basis for showing the effect of change of season. The average size of the picture and number of exposure per roll are interesting in themselves and give important information as to the amount of chemical work a given tank of developer will perform. Under-exposure, those negatives that required normal paper for prints, or would give good prints on contrast or soft paper, were classified as normal. This means that the exposure was probably anywhere from one-third to three times the proper one—certainly having that great a range. Negatives that required contrast



"THE CLAM DIGGERS." FROM THE WANAMAKER EXHIBITION.
F. W. G. MOEBUS, ALAMEDA, CALIF.

or soft paper and special treatment to "save" the picture were called thick or thin, and the remainder were blanks and doubles. Four kinds of fog were noted, that along the edge only, in irregular streaks across the picture, all over it, or as a round moon in the center. The motion of the object was distinguished from the generally blurred effect produced by moving the camera, and pictures were considered out of focus when the center of interest was distinctly not sharp. It was sometimes difficult, but usually not impossible, to distinguish out of focus from motion of the camera. Composition was considered under the heads good, average, poor and freaks. It is obvious that most amateur pictures are made for their associations rather than for artistic merit, and to father and mother a picture of Johnny at one year and nine months is more interesting than a great masterpiece, so the average pictures were those that had nothing radically wrong with them. If a picture showed some signs of good taste in grouping, lighting, background or otherwise, it



"SOAP BUBBLES." FIRST PRIZE, THE WANAMAKER EXHIBITION.
DOROTHEA M. SMITH, WASHINGTON, D. C.



"THE SISTERS' WOODS." J. H. BREARLEY, ROCHESTER, N. Y.

A very pleasing and highly artistic piece of composition, suggestive of a good painting. The various lines of the picture are so managed as to give an agreeable combination, and the masses distributed to preserve the balance of the composition and to add to the general effect. The eye is led directly into the view and one may seemingly travel right into the scene, because of the suggestion of distance and atmosphere. The spacing is particularly good. The foreground is interesting without expression of too much detail, and the varying planes of the picture nicely preserved.



**"PROFILE STUDY." SECOND PRIZE, THE CAMERA COMPETITION FOR OCTOBER.
SAM NINOMIYA, PORTLAND, OREGON**

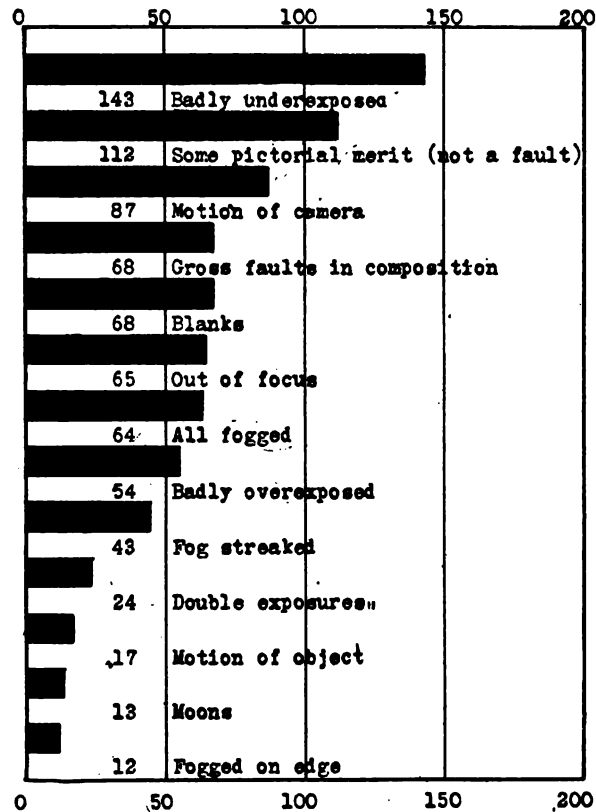
An excellent study in profile, properly lighted so as to give a nice relief to the head without being too pronounced. The treatment of flesh values is artistic and the drapery well considered. The head is well spaced and the general pose animated and pleasing. Altogether a commendable piece of portraiture.

was called good. The poor ones were obviously bad, *i. e.*, the figures were distorted, the heads cut off, or other atrocities committed, and the freaks took care of a certain type of photographic humor.

A study of the tabulated data showed some interesting results. Of the thousand pictures 774 were on six exposure rolls and the others were about equally divided between eight, ten and twelve exposure rolls and packs. The average size of the pictures was $2\frac{1}{2} \times 4\frac{1}{4}$ and 428 were actually of this size. The $2\frac{1}{4} \times 3\frac{1}{4}$ with 254 and the $3\frac{1}{4} \times 5\frac{1}{2}$ with 161 ranked next in popularity.

The accompanying table shows that of the thousand pictures 143 had very thin negatives, and if to these we add a good share of the blanks which showed something but not enough to print, we see that about one-fifth of all the pictures were badly under-exposed, and this in spite of the fact that the study was made during the summer. The samples studied during late August showed a much higher rate of under-exposure than those in July, and I am reliably informed that in the spring and fall this trouble is still worse. This evidence then gives a basis for the first and most important caution: Be sure

Table of faults in one thousand pictures



there is enough *actinic* light. It is very necessary to distinguish between the visual intensity and the photographic intensity of the light. The light in the late afternoon or the reflected light from green shrubbery and under trees may appear quite strong visually, but it is very weak photographically, and on the other hand the light on the shady side of a light colored house with open sky above may be almost as active photographically as visually.

Just how much light is necessary depends on the speed of the lens and shutter and film. The only certain method is for each one to determine experimentally the limitations of his own camera and film by a personal trial under the range of conditions that he expects to work; but a few general principles may be stated. The speed of the lens depends on its focal length and the size of the diaphragm or stop used. These are definite measurable quantities and in all the tests the writer has made the speed has proven to be approximately as marked. Scientific tests of shutters, however, frequently show variation of 50 per cent. or more from the marked values, even in expensive types, and one should know what his shutter will do. For a practical test select a well lighted object with a range from deep shadow to full sunlight and make a number of exposures in some convenient series as the following: 1/100 second on *f*7.7 or U. S. 4; 1/50 second on *f*11 or U. S. 8;



"THE CORNER." SECOND PRIZE, THE WANAMAKER EXHIBITION.
HERMAN GABRIEL. DETROIT, MICH.



"DECORATIVE STUDY." FIRST PRIZE, THE CAMERA COMPETITION FOR OCTOBER, ELIZABETH B. WOTKINS, PASADENA, CALIF.

Decorative effect excellent and general management of the composition good. The figure is properly placed and the balance of the parts preserved. The background setting is especially pleasing, and the perspective feature of the picture adroitly brought in relation to the figure by its oblique trend.



"THE PILE DRIVER," THIRD PRIZE, THE WANAMAKER EXHIBITION.
DR. RUPERT S. LOVEJOY, PORTLAND, ME.

1/25 on *f*16 or U. S. 16, and 1/5 second on *f*36 or U. S. 80. Develop together in a tank. The negatives should all have the same density, because as the diaphragm is decreased, the time is increased in the same proportion. If the negatives do not show the same density, proper allowances must be made. For a second series of tests use 1/25 second, say, and the whole range of stops. Determine by trial which will give the best print and use this as a basis for determining the correct normal exposure.

The second trouble in order of importance was *motion of the camera*. Eighty-seven pictures of the thousand plainly showed this fault, and many undoubtedly passed muster as contact prints that would have shown this fault if enlarged. The second caution must be: *Hold the camera still*. Of course, the sure way to do this is to use a tripod. This is essential for



"YOU GO FIRST." FROM THE WANAMAKER EXHIBITION.
E. M. PRATT, SACRAMENTO, CALIF.

anything less than 1/25 second and advisable for the others, but if one cannot or will not use a tripod, he should experiment until he finds some way he can hold the camera still. For example, brace it against the hip and press the button as lightly as possible instead of snap-shooting from the pit of the stomach.

The third trouble shows 68 *gross faults in composition*. We hesitate to make any brief suggestion here, but *take a look at the background as well as the principal object* and remember that the camera has small power of exclusion or concentration and, at least for small, short-focus lenses, records everything within the angle of view with equal fidelity.

Sixty-five of the thousand had the principal object distinctly *out of focus*. Much of the trouble was due to attempts to make large portraits on a small film. The fixed focus camera loses sharpness at distances less than eight



"MONUMENTUM AD FRATRUM AMORUM" FROM THE WANAMAKER EXHIBITION.
CARSON R. DRAUCKER, PHILADELPHIA.

feet, and for the larger focusing cameras one must *measure the distance accurately*. It is good practice to step-off or otherwise judge the distance marked on the focusing scale, and then to check by actual measurement until one can always guess to within one foot in ten or better.

The next two troubles, 68 blanks and 24 double exposures, are discussed together, because they have one point in common that can be eliminated by making it an invariable rule to *roll up the film immediately after making an exposure*. The 24 double exposures and about the same number of complete blanks were due to neglect of this rule.

About one-third, 54 to 143, as many negatives were over-exposed as were under-exposed. Marine views were most commonly over-exposed. This is



"OLD CITY HALL DOORWAY, ROTHENBURG, BAVARIA." FROM THE WANAMAKER EXHIBITION. MARGARET MOORE, ALHAMBRA, CALIF.

another illustration of the difference in visual and actinic light, the latter being relatively much stronger over open water. The same thing is true, though not to such a great extent, in mountain and prairie views. The exposure for this type of picture can usually be cut to about one-third that for an ordinary view.

Sixty-four negatives were all fogged, 43 showed fog streaks, 13 had moons and 12 were fogged on the edges, a total of 134. The chief cause of this was a too liberal interpretation of the daylight loading system. No doubt a camera can be loaded in bright sunlight without fogging, but it is much safer to *load and unload the camera in subdued light* and to keep the roll wrapped in tin foil when out of the camera. Many of the badly fogged



"STUDY." FROM THE WANAMAKER EXHIBITION.
G. A. LEMBCKE, NEW YORK CITY

negatives seemed to be due to mistakes in opening and closing the shutter for time exposures.

Sharp narrow streaks may come from pin holes in the bellows, but the broad streaks are more often from loosely rolled films. A rather frequent trouble was a round moon in the center of the picture due to opening the shutter when the bellows was not extended, or to a slow leakage through the shutter. This latter trouble can be reduced by always laying the camera face downward. The fog difficulties with film packs were in much greater proportion than with roll films, as were also the under-exposures. The reasons for all the troubles with film packs were not always obvious, but undoubtedly they are not as "fool proof" as roll films.

Only 17 of the pictures showed motion of the object and evidently very few attempts were made to stop rapid motion. This shows unusual wisdom on the part of the amateur, for the idea of fast lenses and shutters for catching rapidly moving objects has been overworked. The chief value of a fast lens is in the quality of its work, and the fact that sufficient exposure may sometimes be obtained in a poor light.

Let us then briefly review the suggestions in the order of their importance.



"THE TUMBLE." © C. C. COOK, NEW YORK

1. Be sure the exposure is determined by the intensity of the actinic light and not the visual impression. A few trials where this knowledge, and not the picture, is the object will save money in the end.
2. Use a tripod or some special method of holding the camera still.
3. Take a look at the whole picture to see that everything that is wanted is included, and everything else is excluded, if possible.
4. Measure accurately if you want a good picture at the shorter distances.
5. Get the habit of invariably rolling up the film immediately after making an exposure.
6. Insert and remove the film in as subdued a light as possible and keep the roll wrapped in tin foil.
7. Don't try to take rapidly moving objects except with a good, fast lens and shutter, but if it must be done get some distance away and work in the direction of motion.

The statistics presented show that a working knowledge and consistent application of the above seven suggestions would eliminate 90 per cent. of the amateur's troubles, and none except the first involves anything much more than common mechanical sense.

PAPERS FOR BEGINNERS—CONTINUED

INTELLIGENT USE OF THE LENS

AFTER the beginner has tried his lens upon all sorts of subjects, if he has any discernment of what constitutes a good photographic reproduction of the original, he discovers the fact that it is not enough to know that his lens has pre-eminently all the good optical qualities claimed by the maker thereof, but finds from experience that there is a possibility of misapplication of it, and that an inferior lens of a different character will better perform the special work he is engaged upon.

Sometimes we hear the landscape photographer complain that the perspective of the scene does not look as it does to his eye, the distant objects come out too small in proportion to the objects near at hand and so apparently increase the distance. Now he is somewhat chagrined to be told that he has not used a proper lens to get what his natural pictorial sense anticipated. Suppose, for instance, you look through a field glass magnifying just ten times; we see objects exactly as if we were ten times closer up to those objects. This is as it should be, provided all the objects are at the same distance from our point of view. But suppose we look at a tree, say at 100 feet distant, and at a second tree a hundred feet further off than the first one, and just sufficiently out of line with each other to bring them almost alongside one another. Our field glass magnifies, we said, ten times, hence it will show us the first tree

just 10 feet distant instead of 100 feet, and the second only 20 feet instead of 200 feet. So we see in the glass two trees which appear to be only 10 feet apart, while their real distance apart is 100 feet.

Now if we look through the reverse end of the field glass we get everything reduced 10 times. In the first view of the trees they appeared 10 feet apart, while with the second they appear 100 feet apart. So you see that the flattening of the perspective is in proportion to the enlarged scale. Now the photographic lens acts in a like way. The picture it gives is not incorrect in perspective, but it is the incorrect distance from which it is viewed. Pictures made with short foci lenses do not give the appearance which the normal vision has of them, because we view these pictures at the same distance we view the scene with our eyes. We must needs place our eyes at the exact distance of the focal length to which the lens was adjusted when the picture was taken. But the normal eye never views the subject from such a point, and hence the perspective looks exaggerated. The advantage of the long focus lens (narrow angle of view), or the use of the middle only of the plate for making the picture, where we employ a short focus lens, is demonstrated in the fact that our eyes may move away from the theoretically proper position of viewing without experiencing the suggestion of exaggerated perspective.

It follows from this that the advice generally given is good advice; that is, that for securing pleasing photographic subjects, a lens of narrow angle (long focus is preferable, because it compels the photographer to select his viewpoint some distance away) should be used; it prevents him from weakening the interest of the picture by including too much upon the plate.

But the photographer who has taken a view which as a whole is not interesting pictorially, will find that not infrequently the cut-off central part of the view has attraction and may be benefited by enlargement.



"WASHER WOMEN IN LUCERNE." W. T. HIGBEE, CLEVELAND, OHIO

TALKS ON COMPOSITION—SEVENTH PAPER SADAKICHI HARTMANN

THE VANISHING POINT IN OUT-OF-DOOR WORK

ALL pictures that represent a perspective view, not merely distance, should have an "exit." This is not necessarily the same as the "vanishing point," scientifically speaking, as the latter in pictorial representation is frequently not shown or is indistinct. But it should be there; as the eye, as it were, feels its presence; it has to be there to convince us of the naturalness of the scene, and the lines must run in a disguised but accurate direction.

An exit in a picture means where the lines of perspective are about to meet. Optically this means that the eye, after resting upon the main point of interest, needs some spot in the picture where the attraction ceases. In Fig. 1 this is shown in a very direct manner. The eye takes in the shepherd and his dog, then becomes conscious of the dark masses of vegetation on either side of the road, but at the same time glides along over the flock of sheep, controlled by two converging lines (that indicate the perspective of the road) to the point where the little bit of distance becomes visible. It is this simple action of the eye which makes this kind of composition successful. The flow from one point to another must be an easy one.

There is perhaps too much detail in the upper left corner, but it is of no special importance, and it is kept so low in tone that it does not interfere. More light on this particular spot would have interrupted the undisturbed continuance of vision. The eye would have jumped back from the flock of sheep to the bright spot in the distance.

In Fig. 2 the problem is a trifle more complicated. The point of exit is indefinite. It is somewhere where the waterway joins the lake or river. There is a lot of detail in the picture; the figures, the flock of sheep, the varied tree-forms, even the reeds in the foreground. But it is a law of this style of composition that there must be an "entrance," some spot which attracts our glance as soon as we look at the picture. In the other picture it was the shepherd. In this picture it is the flock of sheep, a mass of white embedded in darker tones; but at the next instant it glides to the much brighter form of the waterway; with so much detail to the left the lines of perspective could not run straight. It is the zigzag tendency which makes us linger just a little longer on our eye's journey to the vanishing point.

Abundance of detail cannot generally be successfully managed with decided straight lines or even lines merely straight tendency. In Fig. 1 there is a subordination of detail in all parts that are not within the two converging lines. In Fig. 2, all detail is outside the two lines that, after all, furnish the main attraction. For that reason the vanishing point had to be more disguised and the lines leading to it had to run in zigzag fashion. By their peculiarity of shape, although occupying but a comparatively small part of the picture, they hold the interest.



FIG. 1

"NEARING HOME" HENRY DICKSEE



FIG. 2

WHEN THE SNOW IS ON THE GROUND— WILLIAM S. DAVIS

THE amateurs who pack their cameras away at the first sign of cold weather certainly miss some of the finest opportunities for photographic picture making to be found at any season of the year, for from the time the first "whitening shower descends" until "winter storms have ceased to chide" a varied array of subjects is available, ranging from those suggesting "the unkind breath of a blasting wind" to brighter effects which remind one of "lusty winter, frosty but kindly."

Considering the diversity of winter's moods, no one condition of light or atmosphere can be accounted most favorable for the photographer, since every composition must be considered by itself—the success of the result depending upon the discovery of the combination of conditions most suitable in each instance.

Broad open views, composed of simple masses of light and dark, are, however, very often seen at their best on gray cloudy days, especially if one wishes to produce a decorative design made up of flat tones. On the other hand, sunshine—when falling from the right direction—will greatly emphasize delicate textures and details upon the surface of snow or ice, pick out the tracery of snow covered bushes and the like (which are often partly lost on a dull day), and in addition cast shadows which are sometimes of the greatest value in completing the pattern of lines and tones of the picture. Considering these facts, it is well, when possible, to look over the same material under



"THE WHITE SHORE." WILLIAM S. DAVIS

different conditions, as the subjects which do not appear quite satisfactory on the first visit may prove to be just what are wanted when seen again.

Usually the most effective snow pictures are obtained by using only a limited quantity of subject-matter; this proving especially true when the material consists of delicate details, like snow laden bushes and the broken surface of ice and snow, all of which require to be treated in the form of foreground compositions to create a telling impression.

If one has not already formed the habit, learn to note carefully the distribution and gradation of light and dark tones throughout the material it is proposed to make use of. Take, for instance, the snow. Many think of it simply as a mass of pure white, while as a matter of fact, it is only so by comparison with darker parts of a scene, since in reality there are numberless delicate gradations caused by the light striking the surface at varying angles, to say nothing of more clearly defined shadows cast by different objects. Note also the difference between the tone of snow in both sunlight and shadow with that of the sky and dark objects, and don't fail to observe that trees in shadow (which are too frequently represented in photographs as quite black) possess gradation of tone. By taking the trouble to actually study such



"THE VILLAGE STREET." WILLIAM S. DAVIS

points in a scene before making the exposure, a good part of one's technical difficulties will vanish, since by learning how a particular effect is produced, the worker is able to retain the essential combination of materials required to convey a similar impression in the finished picture.

While, as I said before, it is largely up to the individual to find the best time for dealing with each subject, some suggestions may, nevertheless, be given which sum up certain useful points to remember.

To secure the strongest surface textures, upon an expanse of snow, expose during the morning or afternoon hours of a bright day when the sun is to one side, the maximum effect being seen when the sun is also somewhat in front of the lens. Under the latter circumstances beautiful shadows are often seen, and in some instances can be made the leading feature of the composition.

Snow covered trees, with only the open sky for a background, need the light *upon* them to bring out the white tracery with satisfactory contrast. The greatest sparkle is met with on a clear day when direct sunshine strikes at a slight angle and the sky is a clean blue, but good results may also be secured in more diffused light when conditions are such that the sky assumes a dark gray tone.



"THE MISTY VEIL OF FALLING SNOW." WILLIAM S. DAVIS

In order to preserve the feeling of luminosity in snow or ice, it is essential to avoid introducing into the picture any good sized spot of lighter value than the high-lights upon the snow. The sky on a clear day is always darker than sunlit snow (unless one is directly facing the sun)—likewise on dull days when of a leaden hue; therefore, it is obvious that means should be taken to preserve such tonal differences in the photograph. It is true that occasionally the sky and snow may appear of practically equal tone-value, but exposures made under those conditions will likewise prove disappointingly flat, unless the composition is so arranged that a mass of dark objects, almost or quite, replaces the sky in the picture.

Now for the technical details, which beginners, in particular, are always interested in.

The style of outfit is mainly a matter of individual taste, but certain accessories should not be overlooked.

To avoid danger of general fogging (frequently mistaken for over-exposure), some kind of simple hood should be provided for the lens that will shade it from the strong reflected light often present.

A tripod is likewise needed because the exposures required are often longer than can be given when the camera is held in the hand.



"SUNLIT SNOW," WILLIAM S. DAVIS

Ray-filters must be included among necessary equipment, as it is quite impossible to do justice to a great many snow scenes without their aid in correcting color-values. For general purposes a three to four times grade is desirable, such, for example, as the well-known Ingento series "A." While not so often required, it is also very useful to have another of about twice the depth—i. e., 8 times—to give full correction for views containing delicate snow-shadows, also subjects in which the contrast between flat masses of snow and dark trees, or other objects, is very great.

Generally speaking, a filter can be used at all times if the subject is such as to allow the additional exposure required. Its value is, however, most evident on bright days to hold the blue and violet tints down to their true tones as compared with the snow and the less actinic colors of tree trunks, etc.

Load the camera with color-sensitive plates or films, for even with subjects where a filter cannot be used in conjunction with them, their greater sensitiveness to the warmer tints which prevail in the darkest parts will give a better rendering of tonal gradation than plain emulsions. Either the backed or doubled-coated "non-halation" variety of ortho plates are best.

Proper exposure is an important consideration, and many certainly make



"SHADOWS." WILLIAM S. DAVIS

the mistake of under-timing through the fear of losing detail in the snow, and in some cases also force development in hopes of bringing out shadow detail; the finished result being nothing less than the familiar "soot and whitewash" effects, devoid of gradation at either end of the scale. By using suitable plates and filters, sufficient exposure can be given to penetrate the deep shadows without fear of losing the delicate gradations upon the snow, since the restraining action of the ray-filter, combined with the latitude of a non-halation emulsion, will take care of the lighter tones. When in doubt, it is better to err on the side of full exposure, this being especially advisable when contrasts are great, for by so doing one is sure of getting shadow details in the negative by the time the high-lights are correctly developed.

An exposure-meter, which tests the strength of the light by the aid of sensitive paper, is of practical value, but in this connection let me say I have not found it advisable to reduce the exposure for average snow scenes to the extent directed by the makers of such meters. In fact, I generally give the time indicated on the dial of my Wynne meter unless the scene is very open and free from dark objects nearby, in which case one-half to one-third the regular time is better.



"WHERE WINTER WINDS HAVE PILED THE SNOW." WILLIAM S. DAVIS

The data appended at the end of this article regarding the illustrations will give some idea of average exposures under quite a variety of atmospheric conditions, and may serve some reader as a basis for personal experiments.

Any developing formula that gives good results with other classes of outdoor subjects is suitable for winter scenes, only in case of tray development it is better not to use too strong a solution. If diluted sufficiently to produce moderately thin negatives in from six to eight minutes at a temperature of 60° to 65°, the quality should be satisfactory. The writer has used edinol, edinol-hydro, M. Q., and, of late, pyro, with equally good results. The main thing is to stop development as soon as the high-lights on the snow are strong enough to print with the desired crispness. If allowed to go much beyond this point, the lighter tones will block up into a uniform mass, spoiling the rendering of the snow in the print.

Now-a-days the worker who does not care to take up more complicated printing processes can obtain beautiful results by making a proper selection from the variety of gaslight and bromide papers on the market. The matt and rough surfaces in particular are well adapted to the quality wanted for snow effects.

Much can also be done by careful mounting and framing to enhance the general effect, taking care to avoid fancy mounts of all kinds. Use plain cards or mounting papers in various soft gray tones. When the work is framed, a plain, narrow, flat moulding of gray-toned wood with a broad mat of lighter gray will be found suitable.

In conclusion, I give below the data for the accompanying illustrations:

SUNLIT SNOW.—Made at 1 P. M. on a clear day in January. Exposure 1 second, stop *f*16, Ingento "A" filter.

THE WHITE SHORE.—February, 2:30 P. M. Sun in gray haze. Exposure ½ second, *f*16, Ingento "A" filter.

THE VILLAGE STREET.—1 P. M. Very clear light. Exposure 1 second, *f*22, same ray-filter as preceding.

THE MISTY VEIL OF FALLING FLAKES.—Taken in thick snow storm, 9:45 A. M. Exposure 1/50 second, *f*8, Wellington "anti-screen" plate, backed.

WHERE WINTER WINDS HAVE PILED THE SNOW.—Cloudy afternoon. Exposure 2 seconds, *f*22, Ingento "A" filter.

SHADOWS.—Bright sunshine, 2 P. M. Exposure 1/10 second, *f*8, double-coated Ortho plate.

I should have used a ray-filter upon this but for the fact that a stiff wind was blowing the tree branches about, making it inadvisable to risk a longer exposure. This is a type of subject, however, where a "non-halation" plate has the advantage over any other, especially when it is impossible to use a filter.

IN QUEST OF PICTORIAL INCIDENTS— SIDNEY ALLAN

HAVE PICTORIAL INCIDENTS AN ARTISTIC SIGNIFICANCE?

THE readers who have followed my arguments in favor of "pictorial incidents" may have, at times, asked themselves the question whether this simple way of securing transcriptions of nature is really sufficient to produce an artistic result and to express individuality.

It seems to me that the prints that illustrate this series of short composition talks furnish the best answer. Mr. Fitts started taking snapshots in 1907. In 1910 he sent his first exhibition attempts to the jury of the Seventh American Salon, which selected two examples. Since then he has had more than seventy prints accepted at twenty different exhibitions, including the London Salon, which is quite a record.

Pictorial incidents necessarily are sketchy and fragmentary, and they leave much to the imagination; but this is no reason that they should make the impression of incompleteness or of being hurriedly and carelessly done. There is every chance for the display of decided executive ability, and of combining quaintness of arrangement with a certain novelty of manner. The hunter for pictorial bits and picturesque passages can discover such in the most humble scenes and insignificant objects. An excursion into the country, a stroll along shore or river, a detail of architecture, a section of a park or garden, or a plain house and backyard under peculiar light conditions will suffice for a photo-



"CHIAROSCURO." DONALD C. FITTS

graphic sketch—some fantasy of well-balanced spots and masses—and there is apt to be a refreshing atmosphere of virility about all prints made on this order.

Maurice Maeterlinck has written, somewhere, that the simplest subjects were best for pictorial representation, and that "a house lost in the heart of the country," or "an open door at the end of a passageway" would add to our emotional consciousness and æsthetic appreciation of life. "Chiaroscuro" (rather a meaningless title), and "A Japanese Garden" own some of that reticent charm. Very little is said, but that little is perfectly realized. There is a reserve of strength behind this wilful frugality, and the photographer managed to convey in this species of pictorial shorthand all he wished to express. We are compelled to see with his eyes and to appreciate his understanding.

Critics are apt to discover beauty in things that have not any, and at times no one is more surprised than the artist himself at their criticism. I do not wish to fall into the same category and praise people for qualities they never intended to convey. Consequently I would say that the quaint view of the house, the fence, and the Monday wash on the clothes-lines were made merely



"GARDEN LANDSCAPE." DONALD C. FITTS

because they suggested some chiaroscuro mood that might become more pronounced in an enlargement; or in other words, the print is pleasant to look at and would make a delightful spot if seen on a plain wall.

You may ask, is that the purpose of a picture? Not necessarily of a picture (although all good works of pictorial representation should possess the quality), but you forget that this is a sketch, no elaborate composition, and its speculative interest is dependent on its dreamy and quiet mood, expressed with a certain vagueness, of one form melting into the other, which, with the help of proper contrast, lends it a peculiar vibrancy and an air of purposeful intention.

NEGATIVE DENSITY

WE are frequently asked for a method to determine the proper density in the development of a negative, and are compelled to reply that no general instructions can be formulated in judging how far to go in the evolution of the image. It is a delusion and a snare to place reliance on the appearance of the image upon the glass side of a plate, because really this appearance depends upon the opacity of the film before development. When the image shows up clearly it is only because there is little unreduced silver behind the high lights; if the film is rich in silver salt there will be unreduced silver which gives an apparently greater density, and the visual density is of necessity greater in proportion and hence deceptive. To judge the density properly one must really have attained some experience, to the degree of acquiring a sort of intuition as to the right measure. It is similar to the judgment we exercise in most things in our practical operations. We acquire by this experience an intuitive means of estimating results, a sort of unconscious reasoning. We might say this much, however, as a helpful means to the desired end; to wit, in cases of doubt the density should be left under rather than over that which is thought needful, for the reason that photographic methods of bettering the conditions by increase of density (intensification of image) when we find that we have erred, are much superior to the available means of lessening too great density by formulæ for reduction.

A negative which comes under the designation "thin," that is, one not having good printing quality, one properly exposed but under-developed, may advantageously be built up and made almost, if not quite, equal to a perfectly-developed plate by judicious intensification, whereas an over-intense negative is apt to suffer inordinately in the shadows by reduction unless special means are employed—the outcome of much experience in manipulation. We might add that an aid to judgment is secured by having for examination during the development a light of constant quality, and hence an artificial source of illumination is preferable to variable filtered daylight, which is sometimes used as a dark-room illuminant.

THE CAMERA

TRADE-MARK REGISTERED

A MONTHLY MAGAZINE DEVOTED TO THE ADVANCEMENT OF PHOTOGRAPHY
THE CAMERA PUBLISHING COMPANY, 210-212 NORTH THIRTEENTH STREET, PHILADELPHIA, PA.
FRANK V. CHAMBERS, Editor A. WALMSLEY CHAMBERS, Publisher
Entered at Philadelphia Post Office as second-class matter.
Yearly subscription: in advance, postage paid, United States, Mexico, Cuba, Philippines and Porto Rico, \$1.50.
Canada, \$1.55. Countries in the Postal Union, \$2.25. Single copies, 15 cents.

TO OUR READERS

OUR readers may notice that no awards were given for prints in the October Beginners' Competition. Frequently we have received work worthy of much commendation, and often indicative of the advantage gained from the practical lessons upon the merits and demerits of the pictures submitted to our Criticism Department.

Naturally, we looked for a repetition of the good standard of pictures heretofore received, but this month they did not materialize. We do not care to lower our standard in making the awards, as it would be really a premium on inferior work and an injustice to those who are endeavoring to advance.

Our illustrations will, in future, be criticized, as we believe our remarks upon the pictures may be of value, not only to the makers of the photographs, but also act as an object lesson to our readers.

We are also convinced that it is a better plan to insert the criticism directly beneath the prints reproduced in THE CAMERA, rather than discuss their quality under a special heading. Such a method has the advantage of condensation and touches upon the points which are of pertinent value to the worker. We hope in this way to get right in touch with our contributors, and by calling attention to our Criticism Department when consideration has not been accorded in the pages of the magazine to a contribution, we may give satisfaction to all whose main purpose is to advance in the art of photography.

The present condition of the commercial market may possibly account for the deficit in pictorial contributions. The high price of commodities, together with the shortage in supply, has undoubtedly been a hindrance to the photographer. But we are convinced that the lid is now rising, and American manufacturers have awakened to the fact that this country is equal to the occasion. Already we are gratified with the announcements from reputable firms of their ability to meet demands made upon them, and we applaud such makers, not only for their business instinct, but also for their patriotism—"America First."

The excellent quality of the paper stock, the trustworthiness of the chemical products, especially the virtues of the developing agents (quite the equal of the foreign products), make us sanguine of what our American manufacturers are capable of. The old pioneer blood is still in our veins, and we are now able to encounter any emergency that may confront us.

OUR PRINT CRITICISM DEPARTMENT

Prints to be criticised should be sent to the Criticism Department, THE CAMERA, Philadelphia. Only one unmounted print may be sent during any month by a reader. Full data must be sent on the coupon printed in our advertising pages. Always put title, name and address, and word "Criticism," on back of print.

1479. *H. H. Miller.*—"Study Hour." A good genre study and quite a pleasing interior. The composition would be much improved by a better distribution of the accessories. The chair in the center of the picture should have been removed; it confuses the lines of the chair on which the little girl is seated. The playhouse should be shifted toward the right. It looks as if it were a part of the table, and would give better balance if placed where suggested. The train of cars should have been placed

1480. *C. S. Trevoett.*—"Lady-Slipper." An excellent flower photograph, showing well the floral texture and with the plant in its natural surroundings, which makes a beautiful setting and a very appropriate one from an artistic consideration. The plant shows up well and seems to have an atmosphere about it. The technical character is very good.

1481. *O. W. Larson.*—"Rex Road." The upper portion of the picture is pleasing,



No. 1479. *Data.*—3A Eastman Kodak; R. R. lens; f8; October 11 A. M., sun outside; 1/2 second exposure; pyro developer; Artura medium print.

more at an angle; it forms an unpleasant line parallel with the lower edge. The mass to the extreme right (a plant?) is unintelligible and crowds the chair too much. These may seem trivial objections, but a picture must not be too crowded with minor things. It distracts the attention from the main topic.

but the lower part is too much obscured and indefinite. The foreground of a picture should show sufficient detail to indicate its character and to bring it in pleasing contrast with the distance. There is no suggestion of procession up that road.

1482. *H. C. Kipp.*—"Under the Trees." The photograph is woefully undertimed;

harsh and unpleasant, and full of annoying spots of light and dark.

1483. *H. A. Frost.*—"October Days." The composition is good and the distribution of the various parts well considered, but the subject would be better presented with less distinctness of the distance, which approaches the foreground too much and destroys the proper aerial perspective. In other words, the scene lacks atmosphere.

1484. *James Slater.*—"Phyllis." The photograph just fails of being an excellent one on account of the treatment of the little model. The background setting has



No. 1483. *Data.*—5 x 7 No. 9 Premo; symmetrical lens; U. S. 32; October 11.30 A. M., clear light; 1.5th second exposure; pyro developer; Cyco print.

some delightful features and quite a variety, but the figure is very badly managed and seems to have no part or interest in the scene. It is too large for the space and is awkwardly posed. The lines are stiff and unpleasant, and the drapery forms an unpleasant mass of white. A stooping position, showing the child interested in its occupation, would have given curved lines to the figure and better space relation.

1485. *Aug. Eierman.*—"Why?" While the subject may have sentiment, it is questionable whether it is one suitable of rendition by photography. It belongs to the category of the Nude in Art—both of



No. 1486. *Data.*—4 x 5 Cycle Graphic; Struss lens; f6; May 10 A. M., cloudy light; 1.40th second exposure; Rytol tank developer; Cyko plat print.

which subjects demand a treatment in which the realism should not be so pronounced as to interfere with the artistic enjoyment. Such a subject is apt to affect unpleasantly.

1486. *Wm. C. Verburgt.*—"Landscape." A very pleasing view, possessed of much sentiment. The composition is excellent and the general soft effect is delightful. You have succeeded in getting a fine atmospheric effect.

1487. *K. M. Agnew.*—"A Windy Landscape." The photograph is entirely too harsh and considerably undertimed. There are no intermediate tones in the picture, and the foreground suggests a recent fall of snow. Even with the wind blowing fiercely, it would have been possible, had you given a second or two exposure, and have even run the risk of registering some movement, the view would have been much better than this.



No. 1496. *Data.*—Ica Ideal Model A; Anastigmat lens; f8; October, early morning; 1.5th second exposure; Cyko print.



No. 1489. *Data.*— $3\frac{1}{4} \times 5\frac{1}{2}$ Compact Graflex; B. & L. Tessar lens; $f4.5$; September 4 P. M., good light; $1\text{-}10\text{th}$ second exposure; M. Q. developer; glossy Cyko print.



No. 1491. *Data.*—Pony Premo No. 6; Velostigmat lens; U. S. 4; August 5.30 P. M., $1\text{-}50\text{th}$ second exposure; M. Q. developer; Azo hard X print.

1488. *G. W. Spangle*.—"Okanogan Falls." Composition is good and the treatment of the water excellent. The idea of fluidity is well suggested. The water really moves and is not a mere petrification. The receding ranges of hills give good perspective and a suggestion of distance and atmosphere.

1489. *G. E. Brower*.—"A Wayside Stop." Quite a pleasing picture and a good composition. The management of the group adds interest to the subject, and the illumination gives pleasing soft modulations of shadow and agreeable high lights. The draperies, both white and dark, are enlivened by beautiful half-lights and shades. The whole effect is pleasing and novel and indicative of artistic taste.

1492. *Mrs. L. P. VanWoert*.—"The Gardener." An excellent genre study, possessed of considerable artistic merit. The character of the subject is admirably portrayed and the individuality well expressed. The figure is properly spaced and the background setting well associated without too much emphasis, serving to suggest atmosphere and relief. The right hand might have been better managed, coming unpleasantly against the edge. It might have been represented handling some garden tool, which would have relieved its inertness and added to the action of the picture. The technical quality of the work is excellent.

1493. *O. H. Kohler*.—"Graveyard Church." A good architectural photograph, properly illuminated to give relief and



No. 1497. *Data*.— $3\frac{1}{4} \times 5\frac{1}{4}$ Goerz Tenax; Goerz Dagor lens; U. S. 64; September 11 A. M., sunlight; 1-5th second exposure; pyro-soda developer; Azo F medium print.

1490. *J. Douglas Smith*.—"High-Water Mark on the Saskatchewan." There is little that is pictorial here. The bridge itself does not lend itself to the picturesque. The whole subject is too flat and uniform in tone. No gradations of light and shade and no attempt to balance the parts of the picture. It is all one-sided.

1491. *F. Nobu Inouye*.—"Homewards." The upper portion of the sky is too heavy, which throws the picture out of balance and destroys the sky perspective. The view, in our opinion, is much improved by cutting off the heavy mass of clouds at the top, even though we have thereby a mere blank space.

solidity to the structure and taken from a point of view which shows well the character of the subject.

1494. *Don M. Mitchell*.—"Plugged." A well-managed group and expressive of the topic. The models are interested and perform their parts admirably. Good judgment is also shown in the arrangement of the various participants in the scene to give unity of idea to the picture.

1495. *V. George Husker*.—"At Daybreak in Camp." The photograph does not at all express the motive intended. It does not suggest daybreak at all, neither in the appearance of the sky nor in the scene de-



No. 1488. *Data.*—3A Speedex; $f6.3$ lens; September 2 p. m., cloudy bright; 1-25th second exposure; pyro developer; special Velox print.

picted. Such subjects are impossible with the camera and should not be attempted.

1496. *Howard E. Webb.*—"An October Morning." There is much which is highly pictorial in this little scene, caught directly from nature without the least faking. The composition in itself is excellent. The lines of the subject are nicely associated, giving good balance to the picture, and the masses of light and shade kept in proper relation. The figure is well placed and exhibits sufficient action to contrast with the general repose of the scene. The atmospheric effect is superb. You have caught the sentiment and reflect perfectly the motive. You



No. 1499. *Data.*—5 x 7 Conley B. S.; B. & J. Ideal lens; $f7.7$; August 3 p. m., bright light; pyro-soda developer; DuVoll print.

deserve high commendation for artistic perception and appreciation of the beautiful.

1497. *A. H. Cordier.*—"One of Nature's Mirrors." The view is too much extended at the right-hand side and thus makes the subject out of balance. This part of the picture is not particularly interesting and the whole composition is benefited by cutting off about an inch at the right. In our opinion, you then have a pleasing composition. Your technical work is excellent.



No. 1501. *Data.*—3A Kodak; Kodak Anastigmat lens; $f16$; July 5 p. m., bright light 1-25th second exposure; pyro developer; regular Velox print.

1498. *F. J. Dimmig.*—"The Monument." The character of the subject is poorly brought out. The illumination is to blame for this, but the bad handling of the camera is to blame for the tilting look of the structure. You did not properly use the swingback or make use of the right kind of a lens for such a subject.

1499. *C. R. MacCarrick.*—"Outdoor Portrait." The background is entirely too dark and too much in contrast with the figure. It isolates it to the degree that it looks as



No. 1504. *Data*.—No. 3 F. P. K.; R. R. lens; U. S. 8; August 12.00 noon, good light; 1-50th second exposure; M. Q. developer; enlarging Cyko print.

if floating in space. There is no indication of anything supporting the child; it seems to be sitting on a cushion of air.

1500. *N. H. Schammel*.—"Duke." An excellent study of a dog; the canine character is well shown and the position of the animal pictorial. The surroundings are also well related and serve the purpose of an excellent background setting. Considerable taste and good judgment is shown in the treatment.

1501. *G. W. Philleo*.—"A Quiet Stream." Quite a pleasing transcript from nature, showing much taste in selection of point of view. The quality of the water is properly brought out and the reflections in the water well indicated. The variation of light and shade in the foliage is well expressed and the sky prospect very good.

1502. *P. F. and R. B. Scammon*.—"Sunshine and Shadow." The flecked shadows upon the foreground are pleasing and the general composition interesting, but not possessed of much variety of light and shade, and in itself would not attract attention divorced from association with the foreground. This latter feature is therefore the only commendable element in the picture. The rest of the subject is somewhat monotonous.

1503. *Otto A. Stiller*.—"Fire at Night." Considering the difficulty involved in making such a photograph, we think you have

succeeded in giving a good idea of a fire at night; but the subject itself is not one suited to pictorial intention. In other words, it is not a picturesque fire. The data you furnish, however, is of considerable interest to the photographer in search of such exposures.

1504. *C. H. Bunch*.—"The Commander." Your motive in this picture is to portray a boy and his pet dog at play, and your first consideration should be to express your motive in terms of art intelligible to the spectator. You must needs, therefore, employ only such terms as shall clearly present your topic and eliminate all that is irrelevant. You have not done this. The main topic is obscured by a multitude of distracting features, which draw off the attention and annoy, not only by their lack of association, but also by the confusion of lines, claiming equal attention with what was your sole purpose to present. You should have more concentration of purpose and have focused interest upon the boy and dog. The composition itself is too scattered. There is no attempt at co-ordination of lines, no focus of interest. The eye wanders all over the uniform mass of light and shade and finds no place to rest.

1505. *A. W. Gustafson*.—"Two Prospective Farmers." The group is not convincing; one can hardly see the motive. The



No. 1506. *Data*.—No. 1 Pocket Kodak Jr.; f16; October 10 A. M., bright light; 1-25th second exposure; Kodak tank developer; Azo hard print.

youngsters do not particularly suggest embryo farmers and there is nothing to indicate their future calling. Besides, as a mere group composition, they are not pleasingly disposed. They are simply having their photos taken, and they know it as well as we do.

1506. *E. Peterson*.—"Anchored." Composition quite pleasing, but the balancing of it would have been better preserved by having the boat a little lower and a trifle further to the right side of the picture. The technical quality is very good.

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DEPTH OF FIELD WITH LENSES OF LARGE OPENING

One of the immediate consequences arising from the appearance of plates using polychrome screens has undeniably been the creation of lenses of large aperture, whose special object is to compensate in a measure for the lack of speed in these plates, which is not due to any want of sensitiveness in the emulsion, but rather to the absorption of a large proportion of the light by the color screen, the varnishes, and especially the compensating yellow filter.

But lenses of large opening are not designed exclusively for color-photography. If they are more particularly interesting for this special adaptation, they render equally good service in other circumstances.

According to certain writers who have studied these objections from the point of view of the amateur who devotes himself especially to record photography, the use of large openings is very limited.

It is very evident that very luminous lenses were not invented for the novice in photography, and all the more considering that beginners generally use lenses with a fixed focus. However, there is no need of going to the extreme of thinking that these lenses are only of service on rare occasions by professional photographers, reporters for instance, who must be able to work under conditions that are often very difficult.

The principal, if not the only objection (the focal distance coming rarely into the question) made against lenses of large opening is their slight depth of field; that is, the small extent of clear focus in the different planes of the image. It is quite certain that a lens working at $f68$, for example, will give a larger number of clear planes than one working at $f4.5$; but the depth of field given by the large opening is not absolutely incompatible with obtaining an excellent picture capable of being enlarged later.

For a given opening, the greater the focal distance the less extensive is the depth of field. Inversely, for a given focal

distance, the larger the opening the smaller likewise will be the depth of field. Besides, it will be still smaller the nearer the object focused upon is to the camera.

From the point of view of clearness of the various planes, therefore, it will be best to focus upon points far from the lens. In practice this is done the greater part of the time.

What then is of special interest to know is the minimum distance starting from which all objects are clear up to infinity with a given lens and a given opening.

This minimum distance is called the hyperfocal distance, which varies according to the relation of the opening to the focal distance and to the length of the focal distance itself. It is not always influenced in the same proportions by the focal length and by the opening.

1. It varies in inverse ratio to the square of the focal distance.

2. It is proportional to the quotient of the focal distance divided by the usable opening.

Thus, an objective of 12 centimeters focal distance with opening at $f4.5$ and focused on absolute infinity, will give, according to the common formula:

$$\frac{12^2}{4.5} = 32 \text{ meters net.}$$

If the lens has a focal distance of 24 centimeters, also with opening at $f4.5$, the result will be:

$$\frac{24^2}{4.5} = 128 \text{ meters only, or four times the}$$

minimum distance imposed by the lens of 12 centimeters. The latter would be for opening of $f9$:

$$\frac{12^2}{9} = 16 \text{ meters, or one-half that of the lens at } f4.5.$$

It is possible to reduce by one-half the preceding limits of clearness if the focusing is done on the hyperfocal distances corresponding to the different openings used, instead of absolute infinity.

The examples cited show clearly that the focal distance influences much more the forward limit of clearness than does the opening itself. It is therefore against long focal distance that one should guard rather than against large openings.

In any case it is best to select, as far as possible, lenses of short focal distance; hence the advantage of using small-size plates with large-opening lenses. However, there is no objection to using $3\frac{1}{4} \times 4\frac{1}{4}$ or even 4×5 plates in a hand camera.

We would remark in this connection that in order to have the whole plate perfectly covered with a large opening, it is not indispensable, even with very luminous

lenses, to have the focal distance equal to the diagonal of the plate used; for instance, $5\frac{1}{4}$ inches for a $3\frac{1}{4} \times 4\frac{1}{4}$ plate.

Certain types of lenses (those with cemented glasses) cover the $3\frac{1}{4} \times 4\frac{1}{4}$ plate with a focal distance between the length of the long side and that of its diagonal. A focal length equal to the long side itself even is sufficient if the lens is not used out of centre, the lens being kept at full opening. In this case the picture will show some decrease of intensity of lighting towards the edges of the plate, especially if under-exposed. A focal distance of $5\frac{1}{4}$ inches is then preferable.

The difference of front limit between different lenses is sufficiently noticeable to be worth taking into consideration when selecting the focal length.

V. CREMIER in *Sud-Est Photographique*.

PHOTO-ELECTRIC EFFECT

The term photo-electricity is applied to the phenomenon which is observed when a beam of light is permitted to fall upon certain substances which are negatively charged with electricity. If the conditions are properly chosen, it is found that such substance, regardless of ordinary leakage, will gradually lose its electric charge. For instance, if a plate of polished zinc is placed upon an insulating stand, connected with an electroscope and given a negative charge of electricity, the deflection of the electroscope gradually decreases when the plate is exposed to the light of an arc lamp. If a grounded plate or sheet of gauze of some other metal is placed between the plate and the source of light, the discharge can be observed still better. If the plate be positively electrified, the discharge does not take place, or only very slightly. The experiment may be modified by employing in place of the electroscope a sensitive galvanometer. A battery has its negative terminal connected through the galvanometer to the polished zinc plate, while the positive terminal is connected to the metal gauze. No current will flow until the zinc plate is illuminated, but when a strong light containing ultra-violet rays is thrown upon the plate, the galvanometer will show a deflection.

These experiments show that there is a leakage of negative electricity from certain negatively electrified bodies which are exposed to ultra-violet light. In terms of the modern theory, we may say that under these circumstances there is an escape of negative electrons from the body upon which the light is incident.

The substance of which the body is composed has a great influence upon this discharge. The most photo-electric bodies are those which are known to be electro-positive, and the order in which the photo-

electric effect is most markedly shown is the same order as that of the ordinary electrochemical series. In other words, the metals which show this effect most strongly are rubidium, potassium, sodium, magnesium, zinc, etc. The least sensitive are the electro-negative metals, such as platinum, gold and silver. Many compounds also show this property, especially certain sulphides and iodides. Prominent among these is the phosphorescent sulphide of barium. Other phosphorescent and fluorescent substances also exhibit this property very strongly, such as fluorspar, silver iodide, and many aniline dyes. There thus appears to be a connection between the phenomena of fluorescence and phosphorescence, and the photo-electric discharge.

The physical nature of the surface and the nature of the atmosphere or gas in contact with it also have a marked effect upon the result. Thus, a polished surface will give a stronger effect than one which is rough or tarnished. Pure, clean, metallic surfaces in a high vacuum not only give strong results, but are free from a deterioration or falling off of the effect with time, which is known as photo-electric fatigue. This is observed in metals which are exposed to the atmosphere for some time.

The condition of greatest importance, however, in determining the amount of photo-electric effect, is the frequency or wave-length of the incident light. The wave-length for which the effect is a maximum is different for different substances. For most of them ultra-violet light has a greater effect than visible light. The effect is independent of the temperature.

Perhaps the most useful practical application of this phenomenon has been in the photometry of faint light sources. The use of such a phenomenon for a measurement of light eliminates from the operation the personal equation, which in one way is an advantage. However, since light intensities are a matter of physiological effect, the substitution of a purely physical effect, therefore, will be satisfactory only when the sensitiveness of the substance used for the photo-electric effect for different wave-lengths is similar to the sensitiveness of the retina of the human eye. This can be accomplished by the use of an absorbing screen properly chosen. For merely comparative purposes, as in photo-metering variable stars, such a screen can in many cases be omitted.—*Electrical Review*.

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"What Lens Shall I Buy" is the title of a new booklet just issued by the Bausch & Lomb Optical Co., Rochester, N. Y. It tells lens facts in such a clear manner that you should write for a free copy.

MOTION PICTURE PHOTOGRAPHY

CONDUCTED BY
ERNEST A. DENCH

To make motion pictures of the whole United States is the job A. L. Westgard, who has travelled more miles of roads in an automobile than any living man, has now set himself.

Thousands of reels of film have been exposed on "scenics" the country over, but hitherto no comprehensive plan of picturing everything worth picturing has been followed. Mr. Westgard, who knows the beauty spots as no other man knows them, believes that he can show Americans things about their own country of which they scarcely dream.

The Pathe Company, which will distribute the films, believes so, too, and so does the Combitone Picture Company, which is financing the expedition. The pictures are to be entirely different from any hitherto seen, because made by the new Combitone process, invented and perfected by F. W. Hochstetter, formerly of the Edison staff, now consulting photo chemist of the American Photo Chemical Company.

The automobile motion-picture tour, which is to extend for more than 25,000 miles, takes more than a year and includes every state in the union, is made under the auspices of the National Highways Association, of which great organization Mr. Westgard is Director of Transcontinental Highways, and with the co-operation of the Interior Department, which has arranged for Mr. Westgard to take all the pictures he wants in any and all government reservations, national monuments, national parks and forest reserves.

"Will frequent attendance at the movies affect my eyesight?"

"Probably no question has been put to oculists and physicians generally so many times during the past decade as has this," says Gordon L. Berry, acting Secretary of the National Committee for the Prevention of Blindness in the Health Department Bulletin.

"That such has been the case is not strange when we realize that from a very modest beginning this industry has become almost within ten years the fifth greatest business in the United States, with billions invested, with more than twenty-five thousand theaters devoted to it, and with an average daily attendance at these theaters

of more than twenty million men, women and children.

"To that question, there are two answers: First—Motion pictures with defects of photography, manufacture and projection apparent, may prove injurious to eyesight. Second—Eye-strain caused by viewing motion pictures may indicate a subnormal condition of the eyes, which should demand immediate attention on the part of your physician.

"There has never been an extensive study made of the subject, but occasional investigations by interested oculists, illuminating engineers, et al., have developed conclusions which time is proving logical, and which are coming to be generally accepted. Their studies have been in large part based on a few well-known principles relating to illumination and eye-strain, and proceeding on the theory that motion pictures may be a source of eye-strain, let us see what may be the causes, and the method of prevention. The chief points involved are:

"Effect of glare from a poor screen or as the result of improper radiation from the screen. There are two distinct styles of screen, one consisting of a smooth surface dressed with aluminum powder and lacquer, the other of plate glass, the back of which has been painted with the whitest and most opaque paint obtainable. The first of these is, of course, the least expensive, and unless the surface is pebbled or roughened, the picture thrown thereon is not entirely discernible to a spectator sitting at one side, without the angle of incidence. Furthermore, color distortion may be produced, due to the metallic tint which usually obtains, and unless the screen has been properly mounted in a perfectly flat plane, there will result a serious glare. The plate-glass screen is the ideal reflecting surface, and is productive of far better pictures, without glare, and with the minimum of distortion.

"Radiation of light from the surface of a glass screen should not, in itself, prove any menace to vision, as the intensity of illumination on the average screen is far less than is generally supposed. Through the lens system generally in use a 10,000 candle-power brilliancy at the point of

contact of the carbon arcs back of the film in the projecting machine transmits but .0022 candle-power of light upon the screen itself.

"The general surrounding illumination of the auditorium. The auditorium should be as light as may be consistent with securing satisfactory detail in the picture. All sorts of light sources which might cause glare should be eliminated, especially chandeliers, wall brackets, orchestra lights, etc."

The position from which the spectator views the pictures is also a matter of considerable importance, says Mr. Berry. He advises getting in the center of the house not nearer than twenty feet from the screen. "Unsteadiness in the pictures, due to bad direction in acting, poor photography, film blemishes and poor projection, are all causes of eye-strain and are inexcusable because entirely preventable. More serious than any of the foregoing possible causes of eye-strain and one which is most generally apparent is the flicker which will be readily noticeable in most of our motion picture houses. It is due partly to faulty mechanism of the projecting apparatus and again to the failure of the operator to properly adjust his machine. The effect of the flicker is confined to the involuntary muscles which control the action of the iris, which is the colored part of the eye.

"When looking at a motion picture the pupil is contracted to a somewhat smaller opening than when viewing a still picture having the same illumination, and when the flicker in the motion picture is pronounced the pupil of the eye can be seen to tremble slightly as if attempting to follow each fluctuation of light. This may lead to overstimulation and permanent injury. One investigator, in writing on this particular phase, concludes by stating that this constant contraction and dilation must gradually strengthen the muscles of the eye and so eventually develop them to the point where strain would not be caused. From this opinion, however, leading ophthalmologists differ and believe that the fatigue caused by overstimulation due to flicker frequently passes beyond physiological limits and must eventually produce deterioration.

"Finally, the effect of constant, prolonged concentration must be considered as a possible cause of eye-strain from the motion picture. The statement has occasionally been made that motion pictures should be no more productive of eye-strain than viewing the constantly changing panorama of country from a train window. Such a statement is doubtless based upon the belief that if our eyes do not tire when watching scenery change at the rate of about 3500 feet per minute (the train's speed being forty miles an hour), they should not tire in watching a picture

change at the rate of but seventy feet per minute (the average speed at which films are run). The theorist has evidently failed to take into consideration that the foreground of Nature is in colors least apt to take the eyes, and, moreover, and more important, there is a constant unconscious relaxation of the muscles of the eyes. On the other hand, in order to follow the rapidly changing story of the motion picture, it is essential to miss nothing. As many of the popular films of today are run in five reels, each reel of a thousand feet, there is demanded constant concentration of the eyes upon a flickering surface for a period of about an hour and a half. To offset the fatigue caused by this concentration, every spectator should demand, and theater owners should make every attempt to provide, the best in screens, surrounding illumination, seating arrangements, film and projection. Otherwise there can be no doubt but that the 'movies' will be an increasing cause of affections of the eye. Very few people have perfectly normal eyes. The rest are either far-sighted, near-sighted or astigmatic, and many have muscular defects as well. Bearing this, also, in mind, it may readily be seen that the element of continued intentness in large measure prevents a complete muscular relaxation—so essential to the well-being of the eyes."

For the use of motion-picture theaters and exhibitors there has recently been developed an automatic-stop, motor-driven re-winder, taking reels of all sizes up to 2500 feet. The reel of film to be rewound, as well as an empty reel, is placed in the proper compartment. The film is only rewound while the doors of the container are closed, thus eliminating all danger of fire through carelessness. The attention of the operator is not required at the end of the rewinding, as the machine stops automatically. Further, should there occur a break in the film, the machine stops automatically at the point where the film is torn, to allow of splicing.

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The amateur photographer will be interested to learn the details of some experiments which have been printed in a French paper, which indicate that sugar has a decided restraining effect when added to a photographic developer, and possesses some advantages over potassium bromide. It states that the time of development of a normal metol-hydroquinone developer of 100 cubic centimetres was increased from five seconds to five minutes by the addition of sixty grains of sugar, without fogging the clear parts of the plate or injuring the quality of the black deposit. Smaller quantities of sugar were found to produce correspondingly shorter time of development.

THE SPEED OF LENSES

APERTURE		APERTURE
f 4.5	is 1.137 times faster than	f 4.8
f 4.5	is 1.234 times faster than	f 5.
f 4.5	is 1.548 times faster than	f 5.6
f 4.5	is 1.960 times faster than	f 6.3
f 4.5	is 2.777 times faster than	f 7.5
f 4.8	is 1.085 times faster than	f 5.
f 4.8	is 1.361 times faster than	f 5.6
f 4.8	is 1.723 times faster than	f 6.3
f 4.8	is 2.441 times faster than	f 7.5
f 5.	is 1.587 times faster than	f 6.3
f 5.	is 2.250 times faster than	f 7.5
f 6.3	is 1.417 times faster than	f 7.5
f 6.3	is 1.613 times faster than	f 8.
f 7.5	is 2.230 times faster than	f 11.2

By carefully working this out, you will be able to find the speed of the lens which you are using, and how the speed of one compares with another. Better keep this; it will be worth something to you some time.—From *AnSCO Co.*

ARTISTIC VALUE OF THE ACCESSORY

By the term "accessory" the photographer understands anything which serves the purpose of contributing to heighten the artistic effect of the portrait. As its mere name implies, it is a helper; something in its way subordinate to the main feature of the picture, and the implication is therefore that it has no right to be dominant, self-assertive, or in any way conflictory; because then it becomes antagonistic and contentious from an artistic point of view, tending to diminish the good effect sought after. It is, like any other good subsidiary agent, valuable as a supporter, and the photographer should employ it to supplement or to complete the composition, but only so far as its individuality shall be in abeyance. But too often he is attracted by its integral quality to the detriment of the picture. Attracted by some beautiful, and in itself artistic piece of studio furniture, he becomes unduly influenced and gives it uncalled-for prominence, failing to appreciate that its association with the principal object produces an incongruity which is ruinous to both.

We have seen most excellent portraiture work of the best composition, well-posed figure and beautifully lighted, marred by the introduction of objects which destroyed the harmony of the picture simply because they were too attractive. Sometimes it looks as if the photographer regarded the display of his studio attractions more than the model, just in the same way that the enterprising shopman will employ handsome models to show off elaborate gowns.

It would seem from this that accessories in portrait work are ticklish things to handle, and it is possible that this is the reason why plain portraits are more in

evidence than composed pictures. But we think this is evading responsibility. Accessories are most valuable adjuncts to pictorial effect, but the way to study their effect is to consider them from the start at their own value; that is, as merely helpful accessory.

The figure must receive the paramount attention, and first be posed and lighted, etc., without any consideration of anything else. You must secure the best disposition of lines of composition and proper distribution of the masses of light and shade, and then employ your accessories; and all you ask of them is the support of the fine work you have established without their asking. You then learn what potent aid, succor and support a piece of drapery or a curtain will afford you or the wainscoting, or it may be some picturesque piece of background setting. If any or all of these are used discriminately and with an eye single to the main purpose, with the view of giving action or adding interest to the picture, the true value of the accessory has been discovered; its importance in giving unity and coherence to the elements of the picture by its suggestive association.

PARAMIDOPHENOL AND ADUROL

The small amount of metol and its substitutes—which are practically the same thing, since they are salts of monomethyl-paramidophenol—now on the markets of the world is held at exorbitant prices—some \$25 to \$30 a pound!

Although the manufacture of metol and its sister salts is not at all impossible, there are nevertheless great difficulties which will doubtless be surmounted in time. But meanwhile we may ask why it is not possible to produce paramidophenol, whose manufacture is much less difficult, and which, combined with hydroquinone, gives an excellent developer.

By nitration of phenic (carbolic) acid we obtain paranitrophenol (orthonitrophenol being formed at the same time, which can be separated), which, by electrolytic reduction, or by the action of hydrochloric acid and iron-filings, gives paramidophenol.

It does not seem improbable that the manufacture of paramidophenol will be taken up in Italy or the other allied countries. In such case excellent developers could be obtained without metol.

Employed alone or with caustic soda, paramidophenol gives the concentrated developer well known under the name of rodinal, prepared by a German firm. Rodinal is a good developer and is convenient to use, but easily gives feeble negatives. We prefer paramidophenol combined with hydroquinone. That is also the

opinion of Sr. Luigi Laccetti, an able and learned photographer, who says that paramidophenol, properly associated with hydroquinone, gives a developer just as rapid and produces negatives even better than metol-hydroquinone.

The following is a good formula which we have studied:

Water	1000 cc.	35 oz.
Sodium sulphite, cryst.	50 gr.	2 oz.
Hydroquinone	4 gr.	60 gr.
Hydrochlorate of paramidophenol ..	2 gr.	30 gr.
Sodium carbonate, dry	60 gr.	2¼ oz.
Caustic soda	8 gr.	120 gr.
Potassium bromide..	1 gr.	15 gr.

This formula is the result of numerous comparative tests to determine a suitable combination for developing in the same time and with the same characteristics as the ordinary metol-hydroquinone bath.

We also recall that there is a modification of hydroquinone—adurol—which, used by itself, acts almost the same as metol-hydroquinone, but is more rapid in action, less sensitive to cold and gives more harmonious negatives. The transformation of hydroquinone into adurol (which is a monobromo- or monochloro-hydroquinone) presents no special difficulties, since all that is required is to cause the bromine or chlorine to act on the hydroquinone dissolved in benzole.—*Progresso Fotografico*.

DIRECT-VIEW STEREOGRAMS

RUDOLF RIGL, VIENNA, AUSTRIA

The now well-known method of preparing direct-acting stereoscopic pictures is based substantially upon the same principles according to which Ives, Eastman and others, as well as the writer of these lines, have prepared the so-called "parallax stereograms." The difference in printing the stereoscopic part-pictures by means of the well-known light-refracting viewing screen, instead of through a black-line screen, was investigated by me in its time, and it was rejected for the following reasons: Those printing methods that produce the required strip-pictures by means of a screen placed at some distance from the light-sensitive coating do not, for that reason, give good results, because the strips of the picture so copied do not come close together in unbroken series, but are interrupted by light or dark interstices. The result is that a large part of the surface that forms the picture is uselessly cut out and causes either an apparent fogging or even diffusion of the field of the picture. Another reason for this may perhaps be that those pictures now before the public were produced as diapositives, because sufficient clearness could not be obtained when taken by reflected light.

The writer has above all endeavored, by simple and practical printing methods, to bring the strips close together over the whole surface of the picture without intervening spaces, in order to procure in the picture, when combined under the glass or celluloid refracting screen, the best possible conditions for perfect clearness of the direct-view positive.

In order to print from a given stereoscopic negative such a collective strip-picture, a line-screen must be placed between the negative and the printing surface. This is printed on one sheet, and for the purpose of printing the first stereoscopic part-picture this sheet is attached to another sheet of printing-out paper by means of a coat of thick-flowing varnish. By pasting the two sheets together with varnish we obtain in the first place the requisite intimate union of the screen with the printing-out paper, and, secondly, it thus becomes possible to move the screen the breadth of a single line without disturbing the continuity of the whole. In this relation, therefore, the first half of the negative is printed, in doing which care must be taken that the lines of the screen are vertical to the horizon of the negative.

The printing of the second half of the stereoscopic negative is done in the following manner: The print of the first half of the picture, with the sheet containing the screen attached, is adjusted by transparency over the second half of the picture until the "register point" on the negative covers exactly the same point on the print of the first half. In doing this care must be taken that no difference in the relation of the vertical lines occurs. When this is done, the screen, which is held to the negative with the fingers, is pushed to one side the breadth of a full line, an operation that is easily done, provided it is closely watched by transmitted light. At this moment the picture will completely disappear in all its parts, and in this relation the print with the negative is laid in the printing-frame and the second half printed.

To finish the picture the two sheets held together by the varnish are separated by immersing in a solvent and the printed sheet toned as usual, fixed and finished. As the printed sheet has a white ground, it can be at once viewed in appropriate size as a direct stereoplastic positive in connection with the refracting screen already referred to.

There is, however, another way to print the above-described strip-pictures *without* the use of a special screen. For this printing-out paper is employed, on the sensitive side of which lines the width of the strip are printed with a thick-covering printers' ink, with equal white spaces between each. When the ink is dry the sheet is exposed under the first half of the

stereoscopic negative. When fully printed the resulting strip-picture is fixed, the parts covered by the ink remaining unaffected by the light. The print is now washed and dried and the ink removed cleanly by a suitable solvent, leaving the unexposed strips ready to receive the second half of the picture. It is very interesting to observe the gradual filling up of the white lines until a homogeneous whole is completed.

The two methods here described will, when managed with care, serve to produce in the simplest and most inexpensive way possible, practical stereoplastic views in accordance with the well-known principles and without the necessity of costly apparatus other than that already used for other photographic work.

COPYING WOODCUTS FOR SLIDES

"I often want slides from woodcuts," says a writer in one of our exchanges, "and although I have made many copies, have never, till quite recently, been at all satisfied with them. Crude as many of the prints are, with lines rough and rotten, their faults, when seen in their natural size, are as nothing when compared with the appearance on the screen. A friend said he had seen a recommendation to photograph them through a sheet of fine ground-glass, and on trying the experiment it proved a very decided success. The glass should be the finest possible, as the finer the ground surface the finer the copy, and it should be placed with the smooth, not the ground, surface in close contact with the print to be copied."

REPETITION OF FORM

At first thought it might appear that simplicity and uniformity in a picture are antagonistic to variety of expression, but this is not so—the repetition of a form in a composition often has the effect of increasing variety, and this, too, most harmoniously; for it has a particular value in emphasizing the motive of the picture, fulfilling the same purpose as the reiteration of a phrase in music or the alliteration in a poem. As we study the works of the great painters we see how great is the advantage they take of this principle.

The sense of completeness, so necessary to a work of art, is the outcome of this repose, and perfection is not attainable without it. It is not necessary that a picture should, like a novel, tell its story to the very end like the old-fashioned romances. Suggestiveness is the purpose of artistic composition. It must, perforce, leave much to the imagination by the limitations imposed. Beauty of form is secured by unity in variety. These two qualities can only exert their influences where uniformity does not weaken the charm of variety, and where variety has not been permitted to overstep the bounds of modesty to destroy artistic repose, and this repose can only be had by judicious repetition.



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A number of results with the Roehrig's transparent oil photo colors were shown us, the work being done by an amateur, and, considering the ease in applying these new colors, the photographs showed a remarkable improvement. Full particulars may be obtained from your dealer or A. Bielenberg Co., 67 Front Street, New York City.

The International Photo-Sales Corporation, 9-11 East 40th Street, New York City, favor us with a copy of *Artatone for Prints and Enlargements*, a little brochure explaining fully how Japanese paper is made and telling about Artatones generally. A copy can be had free upon request, and if ten cents is sent, a 3¼x5½ sample print will be sent to you.

Quite a few changes have been made recently in the staff of the Wollensak Optical Co., Rochester, N. Y. Mr. Harry C. Gorton, who had been the general manager for the past fifteen years, resigned and has been succeeded by Mr. J. G. Magin as general manager. Mr. E. K. Hamilton, formerly with the Kansas City Photo Supply Co., has been appointed assistant to Mr. Dawes, of the Promotion of Trade Department, in place of Mr. F. Ellwood Lane, who has resigned.

Useful Tables for the Photographer, put out by Bausch & Lomb Optical Co., Rochester, N. Y., is a little booklet every photographer should have for reference. It contains various tables and lens notes for reducing, enlarging, angle of view, distance of lens from the subject, etc., that you need every day. We won't go into complete details here, just write and ask Bausch & Lomb Optical Co., 623 St. Paul Street, Rochester, N. Y., to mail a copy free.

Color and Its Applications, M. Luckiesh, Nela Research Laboratory; 350 pages; 129 illustrations; 4 color plates; price \$3.00 net; D. VanNostrand Co., 25 Park Place, New York.

The field for the application of the scientific investigations relative to the reproduction of color is a wide one in the arts, both æsthetic and technic, and there is a

growing demand for books upon the subject which treat the matter in a comprehensible manner, while at the same time clearly explaining the fundamental principles involved in the rather complex problem. This presentation demands from the author, first a thorough knowledge of the topic, in order to meet the peculiar requirements of those who are specially interested in the practical phase and only incidentally in the theoretical, and, secondly, the ability on his part to clearly exhibit the rationale of the methods, so that the application may be of general value to the many who are interested in some particular field and are anxious to further explore the potential possibilities.

The author of this work is well qualified by his training and through his personal investigations in all the collateral topics to convey just that kind of information which is pertinent to the subject and of essential value to the practical investigator. The matter treated necessarily reviews the labor of those who have brought the science of color to its present status, and the author himself presents his own conclusions, but the particular aim is to support such as have received experimental verification. This makes the book authoritative, and at the same time suggestive of the direction in which the problem is traveling, and touching upon the many involved problems still in its path.

The reader will find this book of Dr. Luckiesh's invaluable in his experiments, in whatever phase he may be particularly interested. The photographer who has plunged into the broad sea of color photography will find that in this work he has a good pilot, with a chart which will keep him out of dangerous shoals and land him in safety.

Color photography, as it is at present exploited, is here comprehensibly and succinctly treated and the various methods described, but the work is also of pertinent value to the general photographer and to those of artistic inclinations. In fact, the whole subject of color in its scientific, technical and artistic phase is admirably treated.

✱

Dear Sir:—I received that four-volume set of the *Library of Amateur Photography*, and I must say that it is a marvel. I showed the books to a bookseller here and he says the price of the paper alone is worth more than you charged me for these elegant books of knowledge. How can you afford to sell them so cheap?

My camera has been on the shelf for over five years, and, after reading a few of the books, I got it down, and I'm now making pictures better than I ever thought I could make. Tell the rest of your readers how good they are.—L. K.

A FORM FOR BINDING THE CAMERA

HALVOR A. CAUM

Having read the article by Jacqueline Thompson in your October issue on "How to Bind THE CAMERA," I determined to bind my back numbers of THE CAMERA. My greatest difficulty in the work was in keeping the pages in exact alignment, not having the patience of Job, and in applying the adhesive to a uniform width along the back of each page.

To overcome these little difficulties I built a form, as shown in the accompanying drawing. This form is merely a box, the exact size of the pages of THE CAMERA, with one side left open. "B" is a board of the same material as the box and is the same length as the pages to be pasted, but one-fourth of an inch narrower than the pages of the magazine, shown at "D" in



the illustration, and this leaves a margin at "C" of one-fourth inch, and the board "B" forms a guide along which the glue brush may be run without danger of the glue spreading where it is not wanted. "A" is a knob fastened to "B" to facilitate the removal of "B" as each page is pasted.

When all the pages are pasted together, the form may be used as a press while the adhesive sets. Merely pull the board "B" front until it aligns with the pasted pages, and then, by the aid of a couple of hand screws, pressure may be applied from both sides.

FOGGED OR FLAT NEGATIVES

M. L. PHILEMON

Perhaps the most exasperating thing with which a photographer has to contend is a flat or fogged negative, when there is no apparent reason for it.

But whether that which causes the flatness or fogging is apparent or not, the reason for it exists, nevertheless, and can be found if it be sought for with diligence.

The average photographer is far too busy to indulge in research work, so he leaves that to those who make research their business.

However, it often happens that he stumbles upon causes and effects by mere accident, so to speak, in the course of the day's work. But to call it accident would not always square with the facts, for if he is perplexed with a fault he does not understand, he will, if he has an inquir-

ing mind, be constantly on the alert for the signs that lead to its discovery.

It has been my experience, and is no doubt the experience of many others, that this mysterious fogging or flattening appears most frequently in tray development. This observation led me to a closer inquiry into the matter, with the resultant discovery of the cause and its prevention.

I found that the reason for this flattening or fogging in tray-developed negatives is twofold:

First—There are very few, if any, really safe ruby lamps; that is, lamps that are safe under all conditions. Here, as in many other features of photography, the element of time enters as an important factor. The lamp may be safe enough for short exposures to them, but when these short exposures are several times repeated, the maximum result is a very long exposure. This is precisely what happens in tray development. The operator, in order to judge when development has proceeded sufficiently, must frequently examine the negative before the ruby lamp.

Second—Dry emulsion is more susceptible to the action of light than wet emulsion. Since the emulsion on all plates consists of two or more coats laid one upon the other, it stands to reason that the coat first coming in contact with the developing agent will be the first one moistened by it.

It is common practice to hold the negative up to the ruby lamp with the emulsion side toward the operator. The result is that the coat of emulsion farthest away from the developing agent, not yet being wet, is yet too sensitive to withstand the action of the light from the ruby lamp during this oft-repeated process of examination.

The remedy will, of course, be at once apparent to the thoughtful reader. When inspecting the process of development, simply hold the plate with the emulsion side toward the ruby lamp. This places the wet emulsion nearest the lamp, which being the least susceptible to light action withstands the flattening effect of the light until the several coats of emulsion have all become moistened by the developer.

THE EXPOSURE METER

C. IRVING REID

The exposure meter is a scientific instrument; therefore, it should be used scientifically. Whether or not to use a meter at all seems to be a matter of much discussion among both amateur and professional cameraists. Sometimes the amateur dislikes to bother with any new additions to what is to him an already complicated hobby. The professional oftentimes seems to have the impression that to use a meter

is a violation of some professional ethics, and an evidence of a lack of skill and experience in judging light values. The true point of this has always seemed rather obscure to the writer, for the professional continues to use scales for weighing his chemicals, and a graduate for measuring the liquids, no matter how much skill or experience he may have in the art of weighing and measuring. Light is a much more indefinite and more variable quantity than any liquid or chemical. Even though one may be a genius in determining the correct exposure, through previous experience with similar subjects under similar conditions, new subjects will present themselves so often that the use of an instrument for measuring the light is still necessary on occasion.

The problem of deciding upon a particular type or make of meter to use must, of course, be left to individual ideas and requirements. There are three types of meters now in general use: The meter using sensitized paper for measuring the density of the light, the "vision" meter making use of the eyesight of the user for determining the strength of the light and the exposure tables and scales—scales of different makes.

The sensitized paper meter has the advantage of making due allowances for any color in the light being used, provided that the sensitized material in the meter has the same relative color-sensitiveness as the plate or film used in the camera. This type of meter is the favorite of many who wish to determine the proper exposure with as nearly as possible scientific precision.

The eyesight type of meter usually consists of a transparent scale, divided into sections of different degrees of density, the strength of the light coming through the scale determining the number of degrees that can be observed by the operator, this being taken as the factor. This type of meter has the advantage of never requiring any reloading, always being ready for use, but has the disadvantage of the necessity of making allowances for weak or unusually keen eyesight of the user. As a general proposition, however, this type of meter can be used with great facility and very good success.

The proper use of any type of meter requires the introduction of the element of personal judgment, for, although the light falling on one part of the subject can be accurately measured, there are many degrees of light and shade in every subject, and just which degree is the most important must be determined before the tests are made.

When used intelligently, the exposure meter is a very great assistance to perfect picture-making.

RECENT PATENTS

A Focusing Camera which combines an ordinary camera with a range finder having the base-line in the instrument. The range finder includes two parallel fixed mirrors at the ends of the base-line and a divided lens, one-half of which is movable to align the images. The application was filed June 15, 1901.

A Roll Film Camera provided with a spring motor, releasing and locking devices therefor and indicators connected therewith. The spring motor is connected with the winding roll of the camera, so that each time it is released a fresh section of film is automatically wound up and the number of the section indicated.

A Roll Film Attachment for Plate Cameras comprising an exposure casing of a size and shape adapted to slip into the ordinary camera back and a film case secured to one outer end thereof, there being a partition extending through the exposure casing and film case. The film passes from one reel into the exposure casing in front of the partition and thence rearwardly of the partition to a second reel in the film case.

A developing tank for roll films which includes a vertical developing space surmounted by a chamber for holding a roll of film. In use, the paper backing of the film is pulled out through a slot, thus rotating the roll and forcing the film itself downwardly into the developing space. To guide the film, a weight is attached to the bottom end thereof. Several light trapped inlets and outlets are provided for the solutions.

A Box for Containing Photographic Plates. It is provided with two light trapped openings into which thin metal plate holders of ordinary type can be slid without fogging the plates. A plate holder containing an exposed plate may be slid into the upper opening and the exposed plate dropped into the box. An empty plate holder may be inserted in the lower opening of the box and an unexposed plate fed thereinto.

A Folding Camera of the Hinged-base type having a magazine in which a number of plates or cut films are stored in special holders. Each holder comprises a casing and an exposure slide. There is also a main slide for the entire magazine chamber. When the main slide is pulled out, it pulls out the slide of the front holder in the magazine so that the film therein is ready for exposure. On reversing these movements, the holder is again closed and is then moved to the back of the magazine so that the second holder may be operated. The holders have translucent strips in the back on which words may be written.

An Easel for Enlarging Cameras. It includes a vertical support carrying a vertically adjustable hook. The Bromide paper is slipped into a special frame or carrier, which is detachably mounted upon said hook.

A machine for Displaying Motion Pictures in Show Windows. The film is wound from one reel onto another and then the actuating motor is reversed and the film rewound onto the first reel. Near the end of the film are still-life advertising pictures, and the mechanism automatically slows up to show these.

THE PHOTOGRAPHY OF LANDSCAPES SHOWING STRONG CONTRAST

A landscape subject exhibiting considerable contrast is generally considered difficult of reproduction by the photographic scale of light and shade. The painter is not so restricted, and photometric laws need not be taken into consideration. He is at liberty to treat his subject in the way it shall best correspond to the eye's peculiar method of estimating contrasts.

In a landscape, for instance, an Alpine view, presenting a wide range of light and shade between the brilliantly illuminated snow peaks and bright clouds in the distance, and projected dark pine trees in the foreground, the contrasts cannot be too much depressed without detriment to the pictorial effect. The painter secures, by adroit means, just sufficient boldness, or amount of contrast, to effect relief of one passage against the other. To what can the photographer have recourse to avoid too violent contrast and to escape flatness by too great depression of the light scale? The only way to photograph the contrasts between dark foreground and brilliant distance is to take the subject when brilliantly lit up from one side by clear sunshine in such a manner that the sun illuminates distance and foreground alike. Under such conditions the effect is that the features and details of the view are more correctly thrown up into relief, or their local contrasts much intensified, at the same time that the main or broad contrasts of the view are not altered from their intrinsic amount, since high-lights and darker foreground partake alike of the extra illumination.

It is an error to be avoided to undertake such a subject when the high-lights only are lit up by sunshine, while the whole foreground is in deep shadow, for then the broad contrasts of the picture are intensified, necessitating a still greater compression of the light scale with its accompanying tendency toward local flatness and blank shadows.

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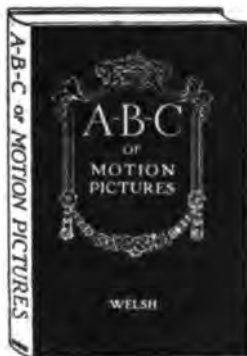
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—a Dictionary of Photographic Lenses, their uses and applications—will answer that oftentimes perplexing question.

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fill every need, the series of Tessars and Protars affording the widest possible range of choice.

Tessar Ic is the lens for speed—on reflecting cameras and in portraiture.

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The prices range from \$6.00 for a dandy Rexo Jr., to \$66.00 for the De Luxe Rexo Special with a score of models between these prices to suit every purse and preference. Examine the Rexo line at your dealers.

Rexo Cameras, Rexo Record Film and Rexo Paper are the three stepping stones to better pictures. A single trial will convince you.



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FINER pictures than the usual camera takes—
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the story of Graflex briefly. For details, see the
Graflex Book that's yours for a postal.

The book goes into full details—tells you all the **How**
and **Why**—explains how the Graflex does away with
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Write for the Graflex Book.

Graflex is the camera that makes the most of the light and
the subject. What other camera, for example, can catch the
kiddies at play indoors or moving objects in the dull, gray
light of rainy day—and get them **SHARP** in detail as a mid-
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for it now.

FOLMER & SCHWING DIVISION
Eastman Kodak Company Rochester, N. Y.

*How the Graflex works—
see Page 4, Graflex Book*

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Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

HOLIDAY GREETING CARRIERS.

To properly observe the requirements of the day, the Christmas or New Year's remembrance should bear the personal touch and for this necessary detail Kodak can be responsible. A calendar on which one of your prints is mounted is not just a calendar—it is a gift from *you*—no one else could have made it. The Olympic Calendar, for example, described elsewhere in the advertising pages is a case in point. Completed by a picture of special interest to the one for whom the calendar is intended, it becomes a gift without a duplicate—a constant reminder of good times spent together or pleasures mutually enjoyed.

The Holiday Folder is another effective means of carrying the season's greetings. The folder is made of antique stock in a cream white shade and is printed in red and green with a holiday design of poinsettias on the cover. Within the folder there is a flap under which the print may be mounted and below is an embossed space for the



signature of the sender. Enclosed in a neat cream colored envelope the Holiday Folder will more than hold its own in the competition of the holiday mail.

Prints colored with Velox Transparent Water Color Stamps readily lend themselves to this form of greeting

card. The effect of a picture properly colored and mounted in the Holiday Folder, for example, is highly pleasing. And the beauty of it is that the successful use of Velox Stamps is simplicity itself. No knowledge of art is required, the colors are self-blending and the striking effects possible are easily secured. The price of the Velox Transparent Water Color Stamp outfit, including book of detailed instructions, book of stamps (12 colors), three brushes and palette is seventy-five cents.

The Souvenir Photo Case is still another form of remembrance that is sure of an appreciative reception. This handsome brown, embossed folder with watered silk finish lining affords a rich setting for any picture. The price ranges from \$.35 to \$.50 according to size.



Eastman Visible Graduate

The graduations stand out like newspaper headlines—if you can see the graduate you can read the markings.

THE PRICE.

2 ounce,	\$0.20
4 ounce,25
8 ounce,40
16 ounce,60

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Eastman Kodak Company

ROCHESTER, N. Y., The Kodak City.



2 $\frac{7}{8}$ x 4 $\frac{7}{8}$ inches.

THE SIZE THAT FITS THE VIEW.

Anybody that rambles along, that starts out to tell you about a brother and then tries to work in his uncles and his sisters and his cousins and his aunts is quite the reverse of a good story teller. It is the same way with some pictures. They try to tell so much that the proper balance between principal object and

details of relative unimportance is lost. The "supes" elbow the star off the stage. Of course this fault can be remedied in a large measure by relentless trimming but the new size picture, the No. 2C, *automatically* cuts out much that is uninteresting. To a very appreciable extent it edits its own picture copy. In out-of-door horizontal views, the foreground and sky which have a habit of monopolizing space are properly restrained and their places are taken by real picture. In portraiture, with the camera held vertically, the somewhat elongated picture gives the maximum of figure and excludes distracting detail at left and right. And that this new size is pleasing, the accompanying illustration demonstrates.

There are just two cameras that make this new size picture, the No. 2C Autographic Kodak Jr. and the No. 2C Autographic Brownie. Both cameras are exceedingly compact—the picture they make permits of a slim, easily pocketed instrument—and as long as unusually compact construction was possible, honest workmanship at the Kodak factories did the rest. As both are up to date in every detail, it naturally follows that both are autographic—as in fact are all the folding Kodaks and Brownies.

THE PRICE

No. 2C Autographic Kodak Junior, with meniscus achromatic lens and Kodak	
Ball Bearing shutter	\$12.00
Ditto, with Rapid Rectilinear lens	14.00
Ditto, with Kodak Anastigmat, f.7.7 lens	19.00
No. 2C Folding Autographic Brownie, meniscus achromatic lens, and Kodak	
Ball Bearing shutter	9.00
Ditto, with Rapid Rectilinear lens	11.00

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Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

THE EASTMAN FILM NEGATIVE ALBUM.

Whether it be for the purpose of making prints or consulting the autographic record, when you want a negative, *you want it.* To be compelled to hunt aimlessly through bureau drawers and closet shelves is always annoying, particularly as the search is often fruitless. And yet negatives lying around loose are quite apt to be at large when you most want them.

The Eastman Film Negative Album not only preserves negatives against injury but insures their accessibility on



Eastman Film Negative Album.

the instant. Each page consists of an envelope of heavy, transparent paper so that when held up to the light the negative shows through. This feature together with the numbers on each envelope and the index at the back, makes it a simple matter to find the negative desired with the utmost dispatch.

THE PRICE.

For 100 negatives, 1½ x 2½,	\$0.75
For 100 negatives, 2½ x 4¼, or smaller,	.75
For 100 negatives, 3¼ x 4¼, or 4 x 5,	1.00
For 100 negatives, 3¼ x 5½, or smaller,	1.00
For 100 negatives, 5 x 7, or smaller,	1.50

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Ask your dealer for the free booklet, "By Flashlight" or if his supply has run low—and if such is the case the fact may be taken as a tribute to the book's value—write to us and we will gladly mail you a copy.



Kodak Flash Sheet Holder, \$1.00

This is the time of year when all indoors vies with all out-doors in an invitation to Kodak. Along with the skating and coasting parties, the chances for pictures on the home side of the threshold are too good to be lost. "By Flashlight" shows you how simple Eastman Flash Sheets and the Kodak Flash Sheet Holder have made this interesting branch of photography.

A Dark Room Lamp that gives you all the light you want with all the safety you need.

The Kodak Dark Room Lamp



is oil burning and is fitted with two slides, one of orange, the other of ruby glass. The slides are interchangeable or both may be used when desired. The wick is regulated from the outside and gives a strong, steady light.

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KODAK

has meant endless pleasure to you—it can mean as much to anyone on your Christmas list.

It's the logical gift for you to make.

Kodaks from \$6.00 up.

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*There's a Merry Christmas for the
amateur in any one of these Kodak
helps.*

Brownie Enlarging Camera.

Brownie Enlarging Camera Illuminator.

Kodak Metal Tripod (the No. 6 is a
pocket tripod).

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Belt Case for Vest Pocket Kodak.

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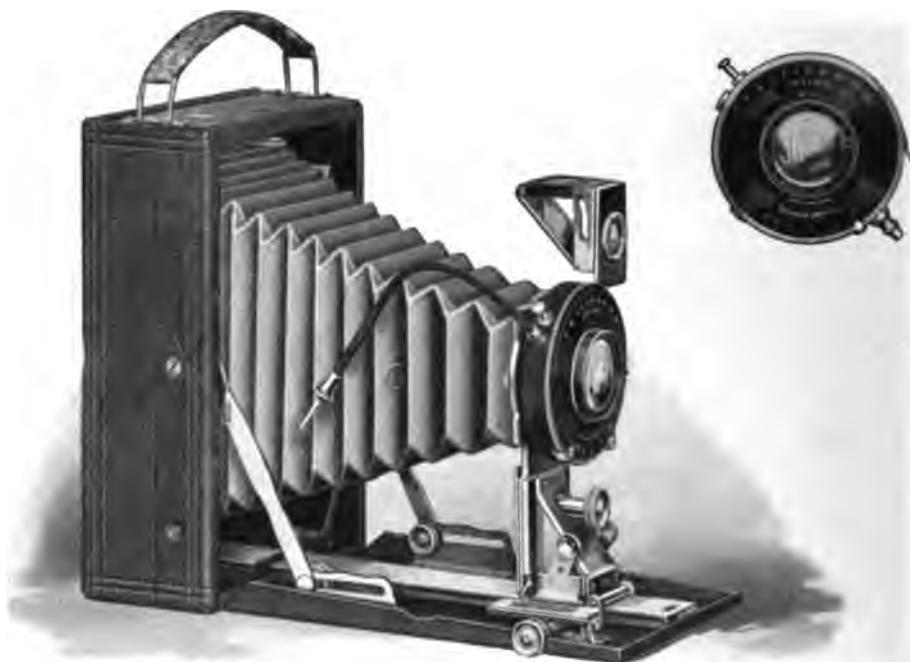
Kodak Film Tank, \$2.75 up.

Kodak Film Tank *and the* Kodak Amateur Printer

The one for film developing, the other for printing, offer full photographic efficiency. Together they make every amateur his own finishing department.

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One Camera That Does the Work of Two **Filmplate Premo Special**

Takes films or plates with equal facility, and is fitted with every desirable mechanical convenience for making pictures under the most exacting conditions.

Equipped with Bausch & Lomb Kodak Anastigmat Lens, *f*.6.3, and high speed Optimo shutter, this model offers the very limit of efficiency in a compact, light weight, simple camera.

Offering the advantage of ground glass focusing and generous bellows extension, this is an exceptionally desirable camera for home portraiture and general interior work.

Prices: Filmplate Premo Special with Bausch & Lomb Kodak Anastigmat Lens, *f*.6.3, and Optimo shutter, Film Pack Adapter and double plate holder, $3\frac{1}{4} \times 4\frac{1}{4}$, \$50.00. Ditto, $3\frac{1}{4} \times 5\frac{1}{2}$, \$60.00.

Premo catalogue free at the dealer's, or mailed on request.

ROCHESTER OPTICAL DIVISION
EASTMAN KODAK CO. ROCHESTER, N. Y.

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Olympic Calendar for Horizontal Prints.

With 1917 just around the corner and Christmas plans already under way

The Olympic Calendar

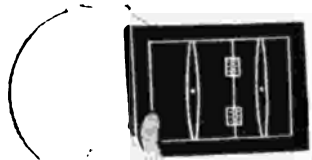
fits into the general scheme very nicely.

Completed by a print from your collection, the Olympic lives up to every requirement that a Christmas remembrance or a New Year's greeting should observe.

Made in two attractive tones of grey and brown for either vertical or horizontal prints.

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

At your dealer's.



Remember that the best print
you can get on

VELOX

is the best print you can get.

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